P-2693

Hostel Administration

By

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Register Number: 71206621004

Of

KUMARAGURU COLLEGE OF TECHNOLOGY

COIMBATORE

A PROJECT REPORT

Submitted to the

FACULTY OF INFORMATION AND COMMUNICATION ENGINEERING

In partial fulfillment of the requirements

for the award of the degree

Of

MASTER OF COMPUTER APPLICATIONS

ANNA UNIVERSITY

CHENNAI 600 025

July 2009

BONAFIDE CERTIFICATE

Certified that this project report titled **"Hostel Administration"** is the bonafide work of **"Mr. Arun. S"** (Register Number: **71206621004)** who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Supervisor **Head of the Department**

Submitted to Project and Viva Examination held on 06-07-2009

Internal Examiner **External Examiner**

BARCINDIA.NET

Bannari Amman Research Consultants
Coimbatore - 641 015.

Date: 04.06.2009

CERTIFICATE

This is to certify that, **Mr. S.Arun, III M.C.A, Reg No: 71206621004** Student of **Kumaraguru College of Technology, Coimbatore** has successfully completed his project work, titled **Hostel Administration System** as part of his course curriculum.

He has done the project using **Struts** during the period of **18-12-2008 to 03-06-2009.** He has completed the assigned project well within the time frame. He was sincere, hardworking and his conduct during the project was commendable.

We wish him all the best in his future endeavors.

For Bannari Amman Research Consultants

(Partner)

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ABSTRACT

The **"HOSTEL ADMINISTRATION"** assists the administrative staff to systematically manage student residential allocation issues, room maintenance services, student forum, search functionality, registry for visitors, and mess bill support and balance dues of each and every student. This system manages various different processes pertaining to the various functions of the hostel. Alternatively, the administrator may also arbitrarily choose available rooms for transfer. Queries and reports are also available to help administrators make decisions based on updated and relevant information. The hostel warden can provide the no due certificate for the students only if the full amount has been paid. The Mess bill calculation and billing support is provided in the system and Student visitor account is also maintained. The project helps to manage the various heterogeneous functions of the hostel effectively.

ACKNOWLEDGEMENT

First and foremost I thank God for his good will and blessings showered on me throughout the project. The success of this project needs cooperation and encouragement from different quarters. Words are inadequate to express my profound and deep sense of gratitude to those who helped me in bringing out this project successfully.

I wish to express my deep unfathomable feeling of gratitude and indebtedness to **Mr.R.Annamalai**, Vice Principal – Kumaraguru College of Technology, Coimbatore for the successful completion of the project work.

I am very gladly taking this opportunity to express a special word of thanks to **Dr. M. Gururajan M.Sc., Ph.D,** Head of the Department, Kumaraguru College of Technology, and Coimbatore for encouraging me to do this work.

I would express heartfelt thanks to our course coordinator **Dr.A.Muthukumar Ph.D**, Professor, Kumaraguru College of Technology for his untiring work to successfully complete this project.

I would express heartfelt thanks to our internal guide **Mrs.R.K. Kavitha, M.C.A. M.phil.,** Senior Lecturer, Kumaraguru College of Technology as with out his best guidance it would not have been possible for me to successfully complete this project who also gave his innovative ideas at crucial times and tremendous encouragement.

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1. INTRODUCTION

1.1. Company Profile

BARCiNDiA.NET

Bannariamman Research and Consultings (BARCiNDiA), based at Coimbatore, is a part of a group involved in software development & Technology Training. They have good experience in successfully executing projects for all type of customers. BARCiNDiA is a technology oriented company promoted by professionals with rich experience and expertise in the industry. The company is focusing on providing technical training and software development for various applications. BARCiNDiA also looks at providing the necessary business computing systems for optimizing the total systems integration, with the help of its vast product range.

1.2. Outline of Project

HOSTEL ADMINISTRATION

Hostel Administration is designed to allow the worker to manage and communicate with administrator and others in the organization to know the general procedure of the hostel. The software will facilitate communication between office staffs, and the administrator. The system also contains a relational database containing a list of students, staffs, menu, inventory, accounts and stocks.

User Characteristics

The users of Hostel are classified into the following groups based on function, location and type of device.

Developers: In order to be sure they are developing the right project that fulfills requirements provided in this document.

Testers: In order to have an exact list of the features and functions that has to respond according to requirements and provided diagrams.

Users: In order to get familiar with the idea of the project and suggest other features that would make it even more functional.

Documentation writers: To know what features and in what way they have to explain. What security technologies are required, how the system will response in each user's action etc.

Advanced end users, end users/desktop and system administrators: In order to know exactly what they have to expect from the system, right inputs and outputs and response in error situations.

End users: Users with no particular knowledge on computer programming. They just use the database for organizing their data and to keep them safe. There are two types of end users.

Working Staff: One who maintains records regarding tax and fee collection, backlog operations, performing entry and printing statements and receipts, scrutinizing, processing.

The working staffs in this module are:

- Warden
- Student

System administrator: Administrators working on computers that support a lot of accounts and personal data for other users. Using Hostel Administration the administrator can save all data with no risk of leak to third persons.

2. SYSTEM CONFIGURATION

The minimum requirements for the system to run effectively are:

2.1 Hardware Requirements

Processor	:	Intel Pentium Core2Duo 1.8 GHZ
Hard disk	:	160 GB
Main memory	:	1 GB
Keyboard	:	105 keys
Monitor	:	SVGA or VGA
Pointing device	:	optical mouse

2.2 Software Requirements

IDE	:	Net Beans
Frame Work	:	Struts
Technology	:	Java
Database	:	MySQL
Platform	:	Microsoft Windows

2.3 About the Software

2.3.1 Struts

Struts in a framework which provides additional security in the data-flow of the application. It provides a three tier architecture called as MVC architecture.

MVC ARCHITECTURE

- **Model**

  The model contains the core of the application's functionality. The model encapsulates the state of the application. Sometimes the only functionality it contains is state. It knows nothing about the view or controller.

- **View**

  The view provides the presentation of the model. It is the look of the application. The view can access the model getters, but it has no knowledge of the setters. In addition it knows nothing about the controller. The view should be notified when changes to the model occur.

- **Controller**

The controller reacts to the user input. It creates and sets the model.

2.3.2 MySQL

MySQL is the world's most popular open source database software, with over 100 million copies of its software downloaded or distributed throughout its history. With superior speed, reliability, and ease of use, MySQL has become the preferred choice of corporate IT Managers because it eliminates the major problems associated with downtime, maintenance, administration and support.

In this project, MySQL server 5.0 is used. It contains MySQL system tray monitor, MySQL migration tool kit, MySQL Administrator, MySQL Query browser. The user name is **root** and schema name is **trunk**. This should be specified in the config.cfg file.

2.3.3 NetBeans

NetBeans refers to both a platform for the development of applications for the network (using Java, JavaScript, PHP, Python, Ruby, Groovy, C, and C++), and an integrated development environment (IDE) developed using the Net Beans Platform.

The Net Beans Platform allows applications to be developed from a set of modular software components called modules. A module is a Java archive file that contains Java classes written to interact with the NetBeans Open APIs and a manifest file that identifies it as a module. Applications built on modules can be extended by adding new modules. Since modules can be developed independently, applications based on the NetBeans platform can be extended by third party developers.

2.3.4 Apache Tomcat 5.5

Apache Tomcat is a servlet container developed by the Apache Software Foundation (ASF). Tomcat implements the Java Servlet and the JavaServer Pages (JSP) specifications from Sun Microsystems, and provides a "pure Java" HTTP web server environment for Java code to run.

Tomcat should not be confused with the Apache web server, which is a C implementation of an HTTP web server; these two web servers are not bundled together. Apache Tomcat includes tools for configuration and management, but can also be configured by editing XML configuration files.

3. SYSTEM ANALYSIS

3.1Existing System

The management of hostel and its resources has been done manually. They were using Register books for the purpose of maintaining the records. Many such Ledger books are used separately for the various process of the management. Some of the separate books to be maintained are Mess accounts, Visitor Register, Room Occupation register, Complaint Register, Student Forums etc. The process of maintaining these accounts are both time consuming and error prone. The information is not retrieved easily and it is depended on the person incharge. The Complaints registered are not followed up well due to the manually addressing of the problem.

DISADVANTAGES OF EXISTING SYSTEMS

1) The existing manual system is time consuming.
2) It is error prone and can be misused.
3) Information retrieval is not easily.
4) Have to incur unwanted expense of Stationeries.
5) It is dependent on Manpower

.

3.2 Proposed System

The proposed System is to develop the java enterprise application to administer and manage the various functionalities of the hotel administration system. The system takes care of the general activities of the students like mess bill calculations and accounts update, Visitors registry, Complaint forum etc to just to name a few. The room occupancy management can be effectively managed

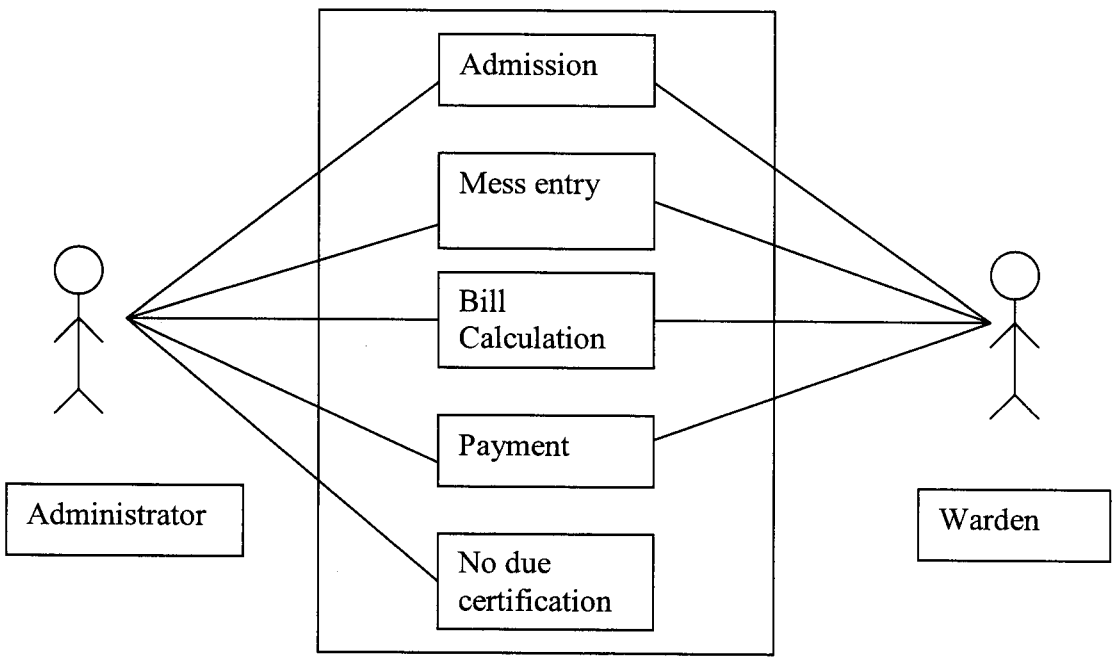
and the allocation of vacant room can be done effectively. The Search function is incorporated to search for the relevant details of the student effectively tracking of the resources and students activities. The visitor register which allows the entry of the visitor only when he updates the online visitor registry. Also, various function of the hostel administration is integrated in this project so that the data integrity is maintained. Queries and reports are also available to help administrators make decisions based on updated and relevant information. Better management of the hostel is ensured by implementing this system.

ADVANTAGES OF PROPOSED SYSTEM

- High data security
- Low utilization of disc space
- Easy Navigations between screens and facility for fast searching
- Security feature are adapted to the users according to the privileges
- Enable to access the required data whenever required in the form of detailed efficient and fast
- The right authentication is done which eliminates the proxy attendances

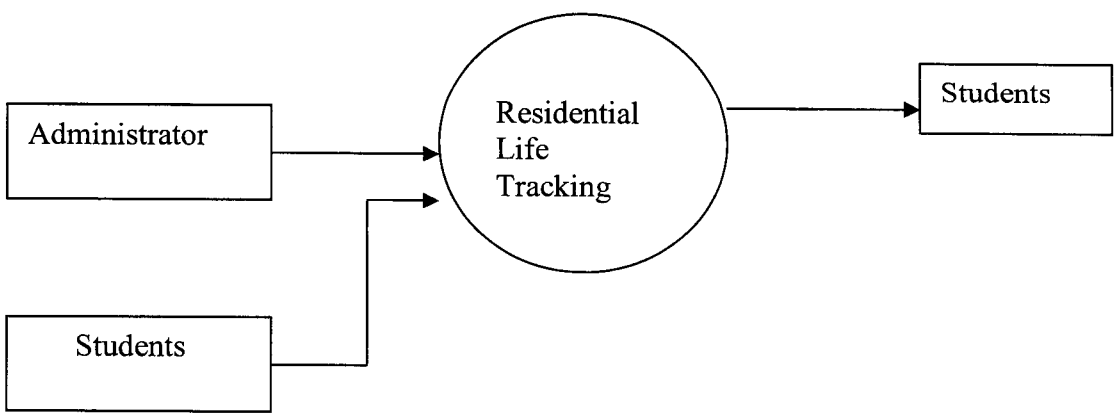
4. SYSTEM DESIGN

4.1 Use case Diagram

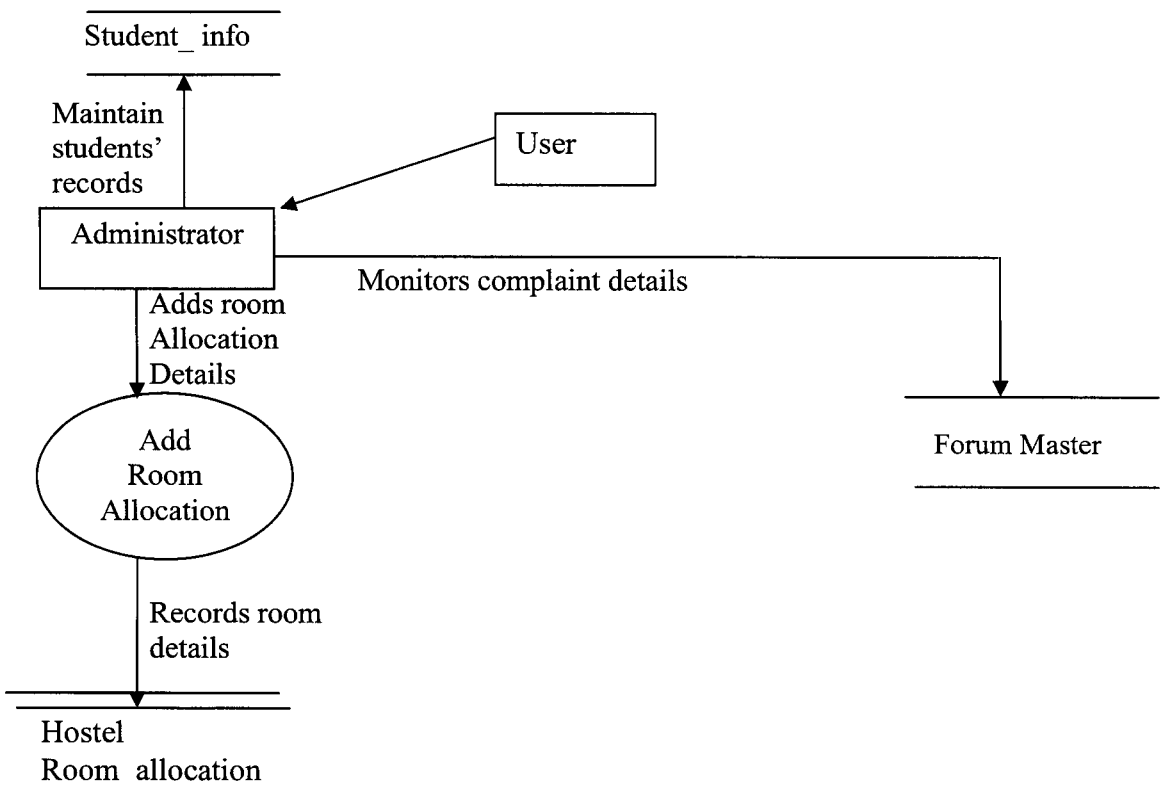


4.2 Data flow Diagram:

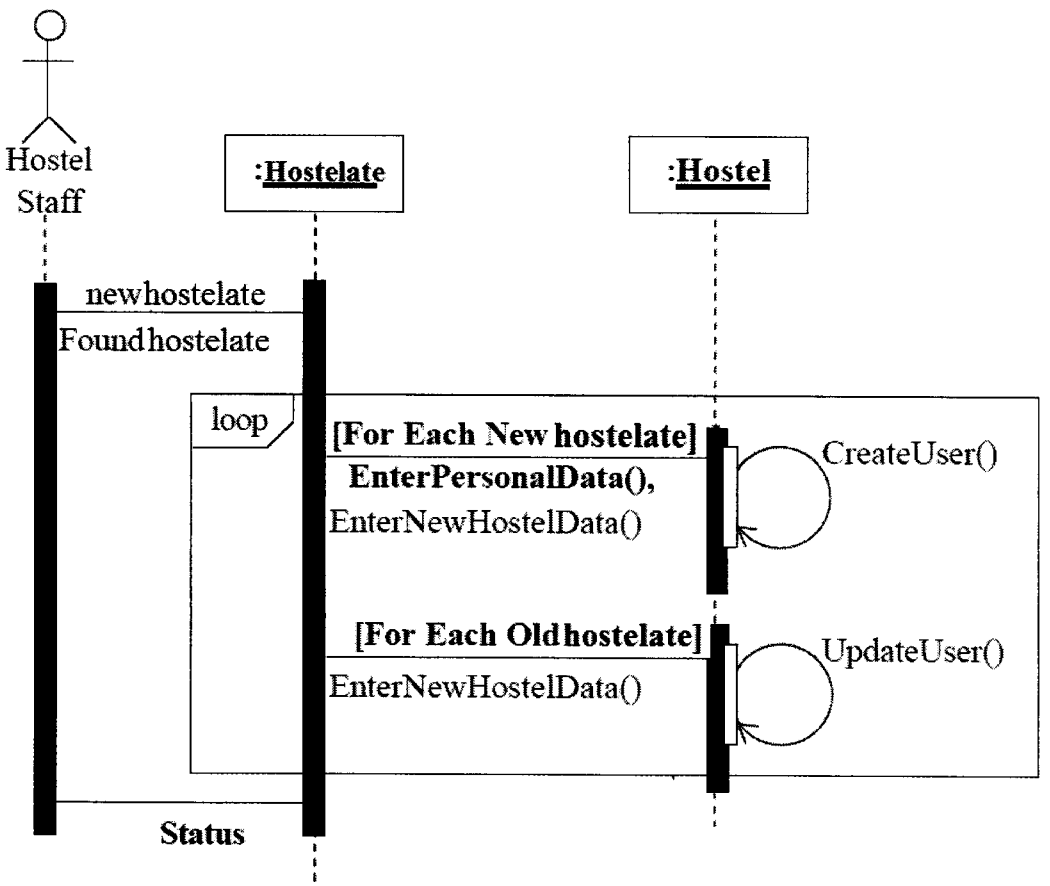
4.2.1 Level-1



4.2.2 Level- 2


Student_ info
Maintain students' records
User
Administrator
Monitors complaint details
Adds room Allocation Details
Forum Master
Add Room Allocation
Records room details
Hostel Room_allocation

4.3 Sequence Diagram:



4.4 Table Structures

1. TENANT

Column Name	Data Type	Description
Regno	Integer	Primarykey
Name	Varchar	Name of the tenant
DOB	Date	Date of birth for tenant
DOJ	Date	Date of join in hostel
Sex	Boolean	Type of tenant
Presentaddresss	Varchar	Tenant Address
Permanentaddress	Varchar	Tenant Permanentaddress
Phone	Integer	Contact number
Email	Varchar	Email Address
Roomno	Integer	Room Number
Advance	Integer	Advance Amount
Table Description: Tenant table is related to Gate Pass table for storing tenant details.		

2. GATE PASS

Column Name	Data Type	Description
Regno	Integer	Primarykey
indate	date	Expected indate
outDate	date	Out date of the tenant
intime	Varchar	Expected intime
outtime	Varchar	Outtime of the tenant
Table Description: Gate pass table stores the information of the tenant intime and outtime.		

3. FORUM

Column Name	Data Type	Description
Forumid	Integer	Primarykey
Name	Varchar	Name of the Tenant
Sentence	Varchar	Description of the forum
Date	date	Specific date posted in forum
Table Description: Tenant can post the forum to other Tenant and Warden and this table related to the tenant table.		

4. MESSENTRY

Column Name	Data Type	Description
regno	Integer	Primarykey
Date	date	Field updated date
Amount	Integer	Mess Amount
Table Description: This table stores the details of a mess amount in the hostel and is related to the tenant table.		

5. PAYMENT

Column Name	Data Type	Description
regno	Integer	Primarykey
Hbill	Integer	Hostel fee
Messbill	Integer	Mess fee
Total	Integer	Total Amount
Paid	Integer	Paid Amount
Balance	Integer	Balance Amount
Visibill	Integer	Visitor fee
Table Description: This table stores the payment details of the tenant and is related to the table tenant, messentry, and visitor.		

6. VISITOR

Column Name	Data Type	Description
regno	Integer	Primarykey
Noguest	Integer	Total number of guest
Nodays	Integer	Total number of days stayed
Table Description: This table stores the visitor details and it is related to tenant table.		

5 SYSTEM DEVELOPMENT

System development is a series of operations performed to manipulate data to produce output from computer system. This aim at translating the design of the system produced during the design phase into code in user programming language. A modular approach is used for the development of the software.

The development phase for the project was created from the specifications created during the design phase. A principal activity of the development phase is coding and testing the computer program that make up the computer program component of the overall system. Other important activities include implementation, planning, equipment acquisition and system testing. The development phase concludes with the report and review.

5.1 Module Description

1) Administrator Module
2) Room Allocation and Booking
3) Search Module
4) Student Forum, Visitors Register and Gate Pass creation.
5) Mess Bill and Accounting.
6) Tracking of Students and Reporting

5.1.1 Administrator Module:

In this module, we take into account the various master tables to be created. Also, the user rights and privileges pertaining to the various types of users are done here. The various masters like students master, room master, visitors master etc are created with suitable primary key and constraints. The field values of each

tables are to be taken into account and correct data type are to be given for the respective field values. All the details pertaining to the master entities are taken into considering and the respective field names are created in the master tables. The administrator is empowered to login with secure username and password to Add, Delete, Edit, Update the values of the field values of the master tables. The primary key and foreign key constraints are given and the various other constraints such as unique etc are made such that the data integrity is ensured.

5.1.2 Room Allocation and Booking:

The students are allotted the rooms based on the preference. The administrations of the occupancy of the students with respect to rooms are maintained here. Based on the availability of the rooms, preference etc the rooms are allotted to respective students.

The Block and the room master are maintained in such way that different department student can be allotted to respective rooms and block.

5.1.3 Search Module:

Queries pertaining to the various information differ in retrieval in several respects. A major advantage of this function is that to support information search by offering the user not just access to data, but also one or more perspectives on the available data. The more flexible functionality, the more different perspectives is a disclosure system integrates news content from heterogeneous data source and in multiple formats. This functionality could be used to access the content at various

levels of abstraction. This module helps find information pertaining to student, rooms, and mess bill balance at a faster rate.

5.1.4 Student Forum ,Visitors Register and Gate Pass creation :

In this module, we student forum is created for them to give their inputs about their needs. The visitors who visit the student also are required to put in their details in the visitor registry. The separate tables and forms are developed for this purpose. Suitable validation is also done. The Gate pass any one taking some resources outside is also implemented in this module. Here, the administrator will authenticate it and will issue the Gate pass. The separate administrator username and password is used for that purpose.

5.1.5 Mess Bill and Account Supporting:

The calculations for mess bill are done here. Depending upon the payment received from the students, the accounts have been maintained. The due balance sheet for all the defaulting students can be taken. The accounts pertaining to room rent are also considered and it is updated. The pending dues are given alerts and the concerned person has to collect it to allow the students continue using the resources.

5.1.6 Tracking of Students and Reporting:

The various reports can be taken and the activities can be tracked of the students. The functionality of the various departments is to be tracked. The complaint given by the students in student forum are followed up for effective action. The various reports can be taken for the purpose of management and to take decisions

6 SYSTEM IMPLEMENTATION

Implementation is the state in the System where the theoretical design is turned into a working system. The system can be implemented only after through testing is done and if found to work according to the specification. The most crucial stage in achieving a new successful system relies in giving confidence for the users on the new system that will work efficiently and effectively.

It involves careful planning, investigation of the current system and to constraints on implementation, design of methods to achieve the changeover, an evaluation of changeover methods apart from planning. System Analysis and design efforts will be more complex system being used for writing program code.

Program Code Preparation

One of the important development activities is the code of programming. The system Use cases and other channels are converted to modular programs; they have to be complied, tested and debugged.

7 SYSTEM TESTING

Software testing is a critical element of software quality assurance and represents the ultimate reviews of specification, design and coding. Testing represents interesting anomaly for the software. During earlier definition and development phases, it was attempted to build software from an abstract concept to tangible implementation.

Te testing phase involves the testing of developed system using various test data. Preparation of the test data plays vital role in the system testing. After preparing the test data the system under study was tested using those data. While testing the system, errors were found and corrected by using the following testing steps and corrections are also noted for future use. Thus, a series of testing is performed for the proposed system was ready for the implementation.

7.1 Unit Testing:

Unit testing focuses verification efforts even in the smallest design in each module. This is also known as "Unit Testing". Since the proposed project has three modules, the testing is done individually on each module and every form designing. Using the test plans, prepared in design phase of the system development as a guide, important control paths are tested to uncover error with in the boundary of the proposed project. In this testing each module is found to be working satisfactory, as regard to expected output from the proposed project.

In hostel administration each module is tested separately and the control paths are also tested. Generate bill, room search, no due certificate and mess bill calculation modules are tested separately

7.2 Integration Testing:

Data can be lost across an interface, one module can have an adverse effect on the other sub-functions, when combined may not produce the desired functions. Integrated testing is the systematic testing to uncover the errors within the interface.

This testing is done with simple data and developed systems has run successfully with this simple data .In the proposed project, each module will run successfully and produce valid outputs in the integration testing.

In hostel administration the integration testing is done with the inter related modules such as mess bill, no due certificate and payment. The modules are integrated with each other module. If the student pays full amount, then the certificate can be issued.

7.3 Validation Testing:

Software validation is achieved through a series of black box testing that demonstrate conformity with requirements. A test plans out lines the classes of testes to be conducted and test procedure defines specific test cases that will be used to demonstrate conformity with requirements.

At the culmination of the black box testing, software is completely assembled as a package. Interfacing errors have been uncovered and correct final series of software Validation test begins. Validation test can is defined with simple definition that validation succeeds when the software functions in a manner that can be reasonably accepted by the user. In proposed project, validation testing will finally occur and it produces required outputs to the user.

7.4 Security Testing:

If the administrators have to enter the server side of the software we have to specify the user name and password. When the user enters the user name and the password, checking it with already registered in the database or not. If it matches, then only the user is allowed to access the page. Otherwise he is denied accesses and there by provides a strong security.

7.5 White Box Testing

White box testing some times called glass box testing, is a test case design method that uses the control structure of the procedural design to derive test cases. Using white box testing methods, the software engineering can derive test cases.

- Guarantee that all independent paths with in a module have been exercised at least once,

- Exercise all logical decisions on their true and false sides,
- Execute all loops at their boundaries and with in their operational bounds, and
- Execute internal data structure to ensure there validity.

In hostel administration white box testing is done for the room allotment, Rooms are allocated for the student by using the random.next().It executes all loops at their boundaries.

7.6 Black Box Testing:

Black box testing also called behavior testing focuses on the functional requirements of the software. That is, black box testing enables the software engineer to derive sets of input conditions that will fully exercise all functional requirements for a program.

In hostel administration Black box testing attempts to find errors in the following categories:

- In correct or missing functions,
- Interface errors,
- Errors in data structure or external data base access.
- Behavior or performance errors and
- Initialization and termination errors.

7.7 Test cases

Module name: Login

S.No	Test Case ID	Test Case Description	Expected Result	Actual Result	Status
1	Login_01	Enter null string in "User Name" Textbox	"User Name" cannot be empty. Should display message to user	Message displayed to user	Pass
2	Login_02	Enter null string in "Password" Textbox	"Password" cannot be empty. Should display message to user	Message displayed to user	Pass
3	Login_03	Check maximum number of characters allowed in "User Name" Textbox	Should allow 10 characters in "User Name"	Allows 10 characters in "User Name"	Pass
4	Login_04	Enter invalid User name in "User Name" Textbox	Should display error message to user	Error message displayed	Pass
5	Login_05	Enter invalid password in "Password" Textbox	Should display error message to user	Error message displayed	Pass
6	Login_06	Enter valid User Name and Password	Should navigate to Main page	Navigated to Main page	Pass

Module name: Room Search

S.No	Test Case ID	Test Case Description	Expected Result	Actual Result	Status
1	RS_01	Enter null string in "Regno" Textbox	"Regno" cannot be empty. Should display message to user	Message displayed to user	Pass
2	RS_02	Enter integer	Should allow only numbers	Show search results	Pass
3	RS_03	Enter string	Should not allow string	display error message	Pass
4	RS_04	Enter special character	Should not allow special character	display error message	Pass
5	RS_05	Maximum integer in search box	Should allow to enter two	display error message	Pass

Module name: Generate Bill

S.No	Test Case ID	Test Case Description	Expected Result	Actual Result	Status
1	GB_01	Enter null string in "Regno" Textbox	"Regno" cannot be empty. Should display message to user	Message displayed to user	Pass
2	GB_02	Enter integer	Should allow only numbers	Show search results	Pass
3	GB_03	Enter string	Should not allow string	display error message	Pass
4	GB_04	Enter special character	Should not allow special character	display error message	Pass
5	GB_05	Maximum integer in search box	Should allow to enter two	display error message	Pass

8 FUTURE ENHANCEMENT

This application can be enhanced to track the resident and manage students administration with various features like Image file captured over a video taken from hidden camera in student hostel .It can be can be utilized to take corrective action and reporting to the respective authorized person.

9 CONCLUSION

This project Hostel Administration was prepared with guidance and discussion with personal involved in this project and technical staff.

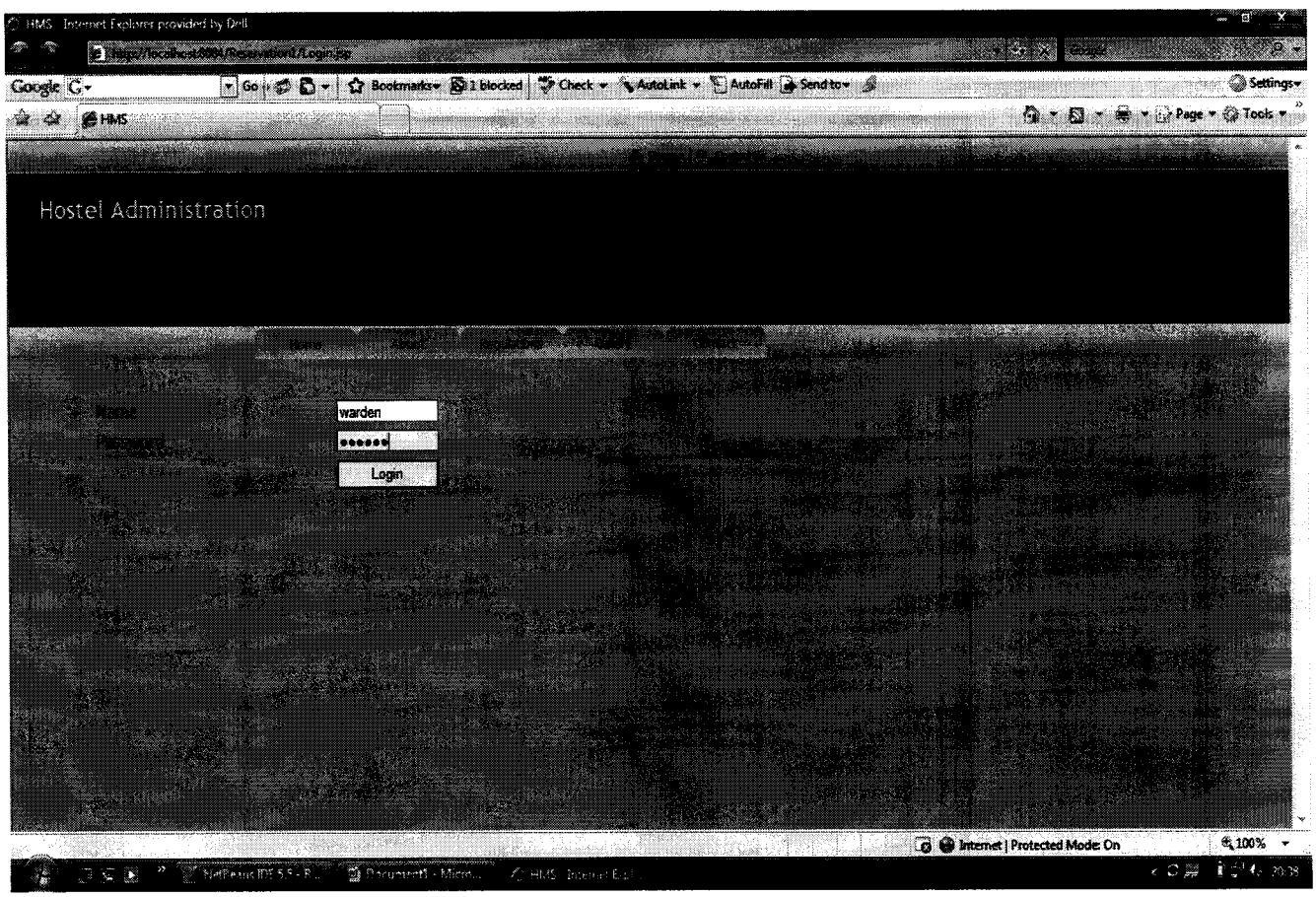
This project has been developed with maximum care. It has been developed with an eye on expansion and flexibility at every stage of all the modules. This is, developed to meet almost all the requirements of the user. This will replace the existing manual system. This is more advantageous over the existing system as it takes into account the security and efficiency of the system. It is accurate and very fast and produces various kinds of detailed reports.

Further enhancements can be made at any later point of time. Reports can be represented in all-necessary perspectives. Added options can be included in designing reports. This project is developed in a user friendly manner in GUI software. The user can perform the operations such as addition, deletion, and modification of the database very easily but in a specified manner.

10.APPENDICES

Screen Shots

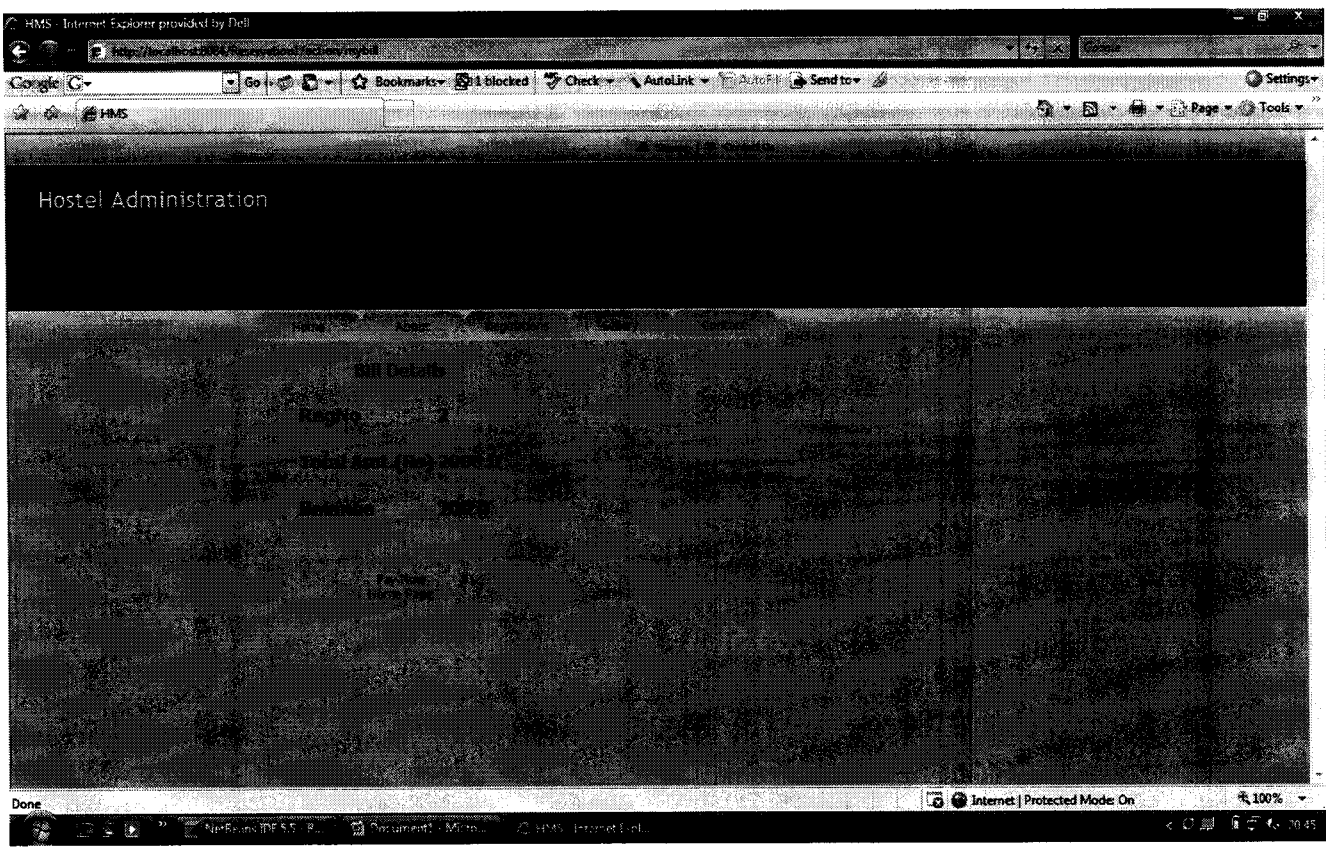
WARDEN LOGIN



STUDENT HOME PAGE

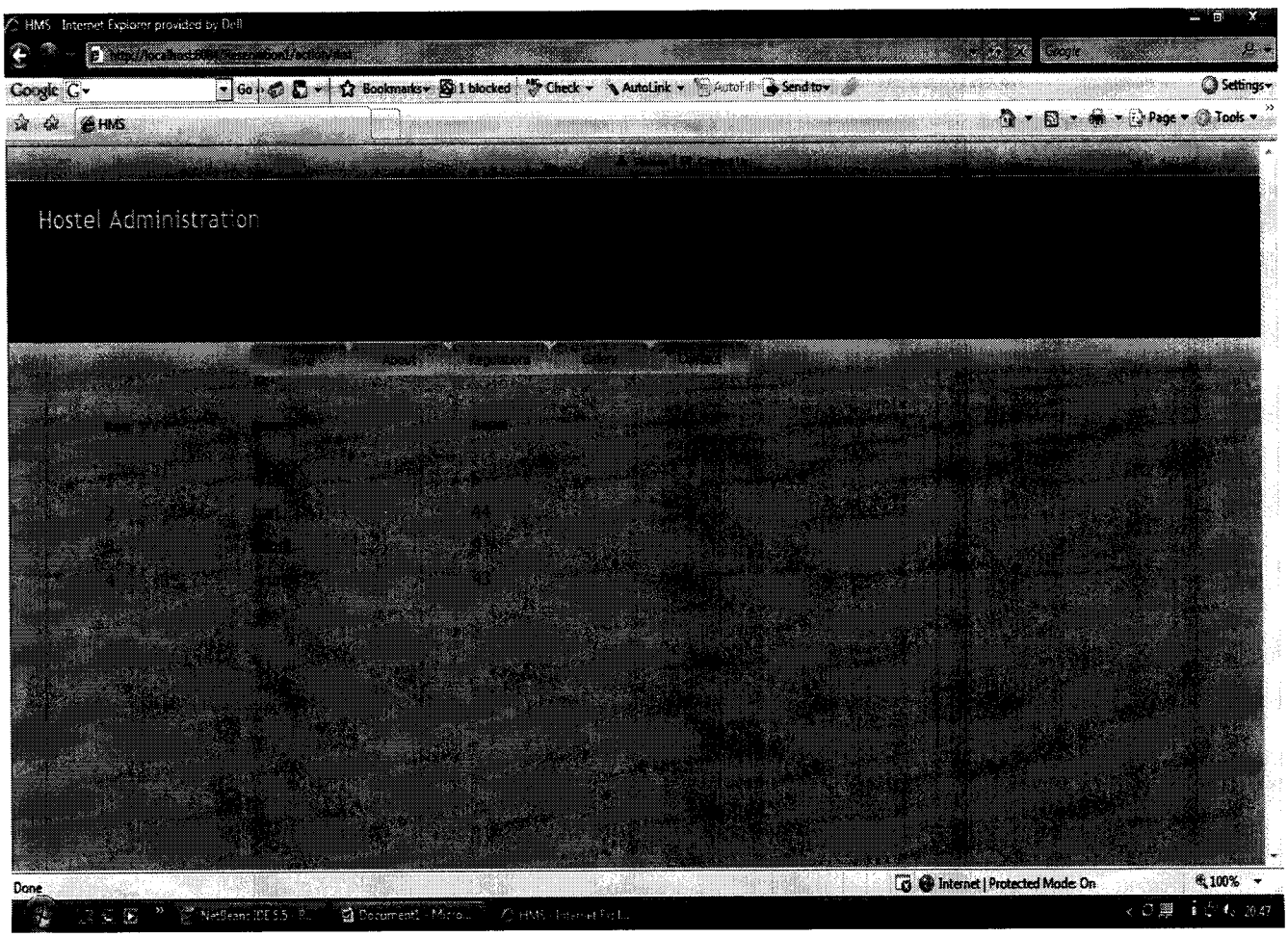
MESS MANAGEMENT

VIEW BILL

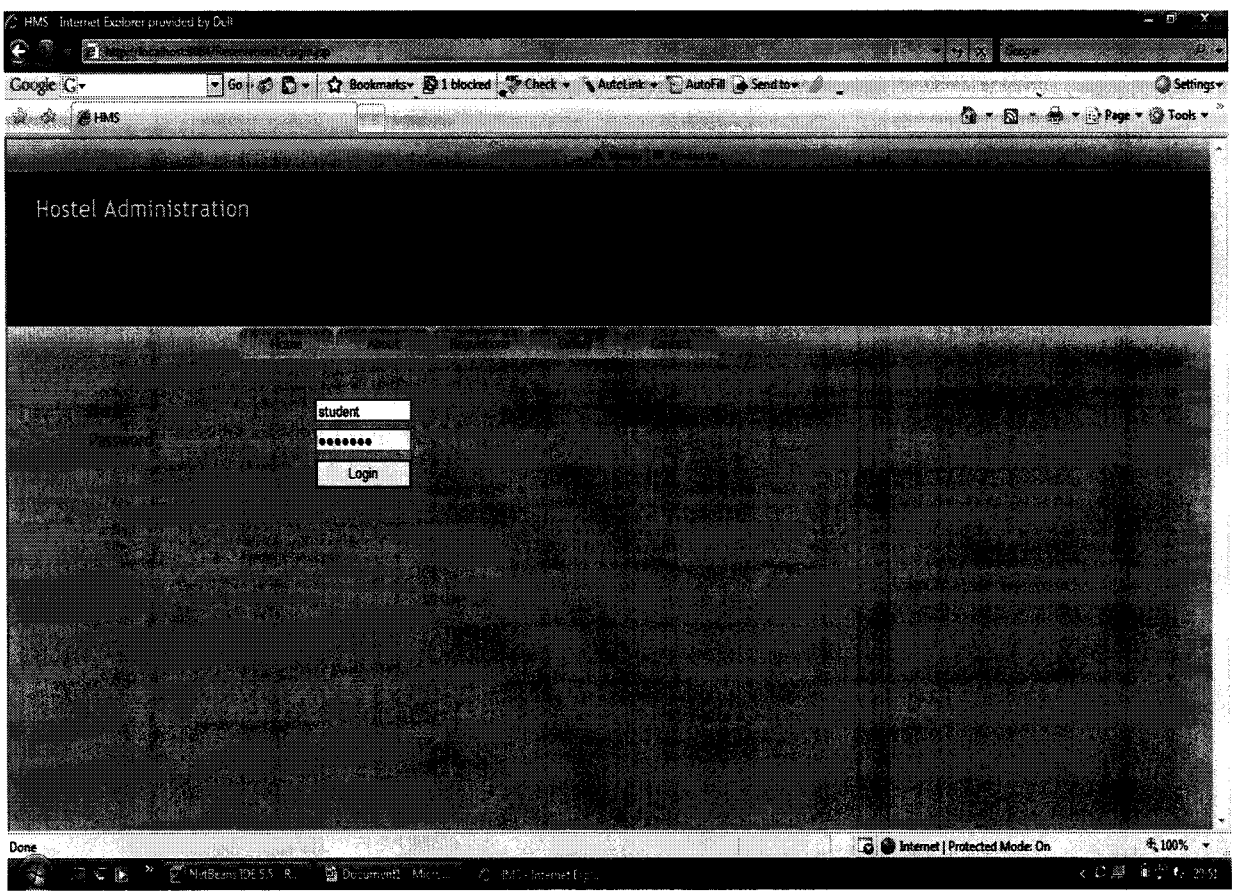

HMS - Internet Explorer provided by Dell
Hostel Administration
Done
Internet | Protected Mode: On
100%

MESS DETAILS

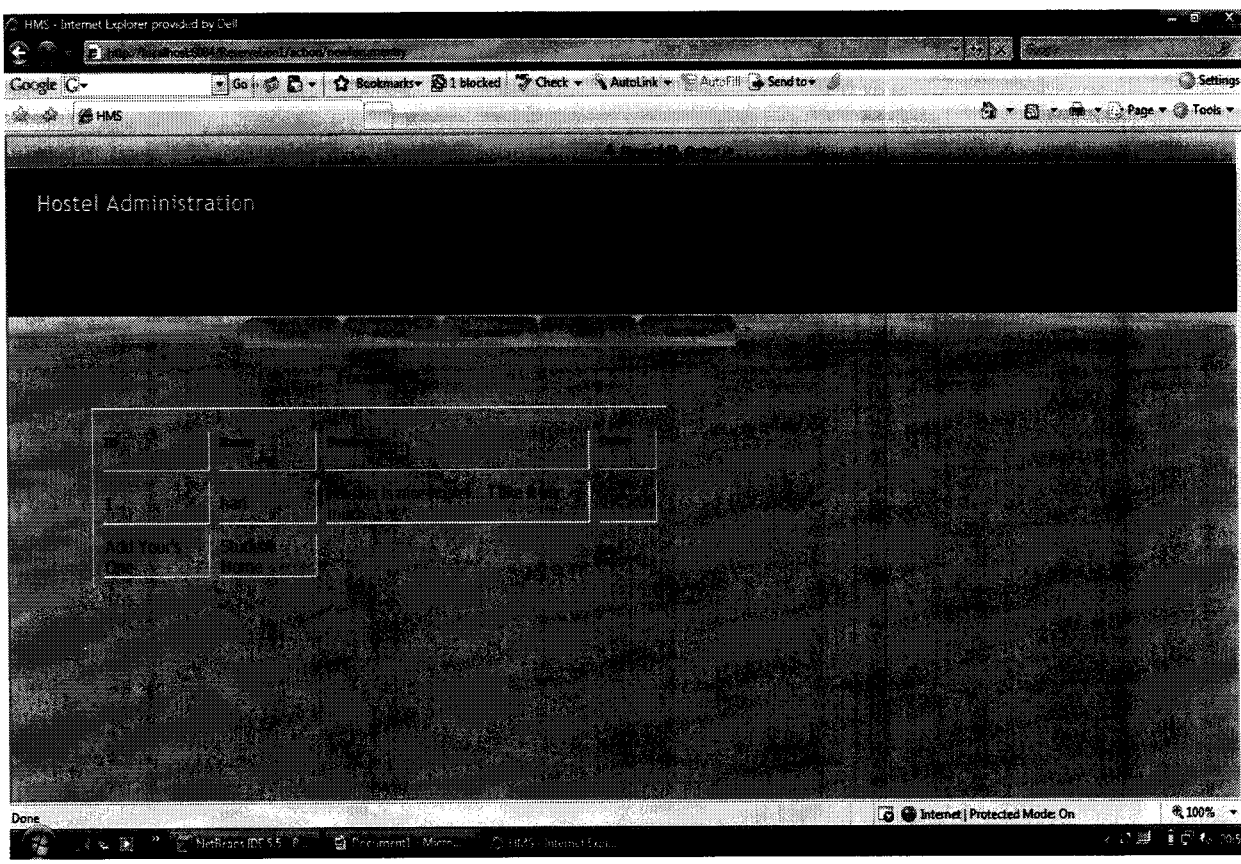
ROOM DETAILS



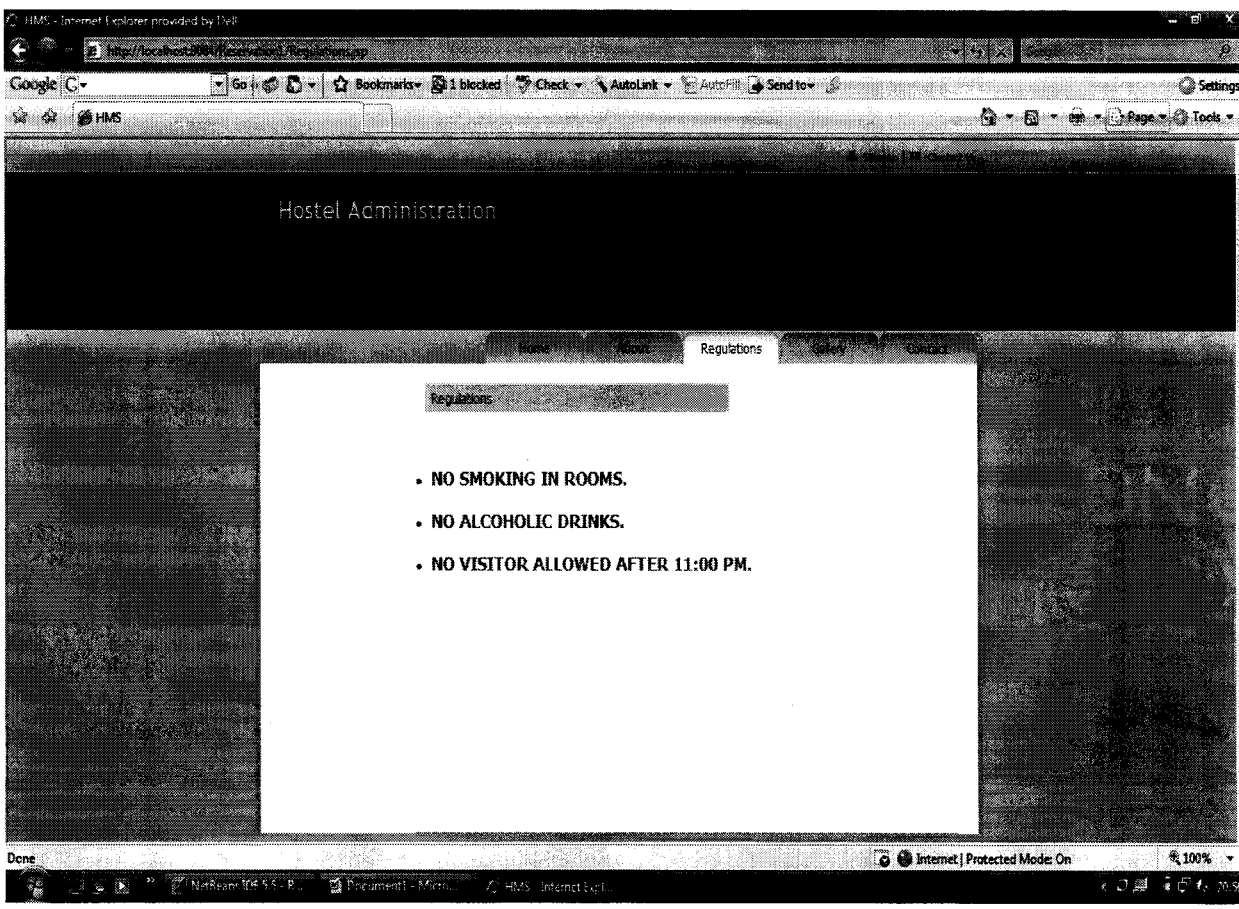
STUDENT LOGIN



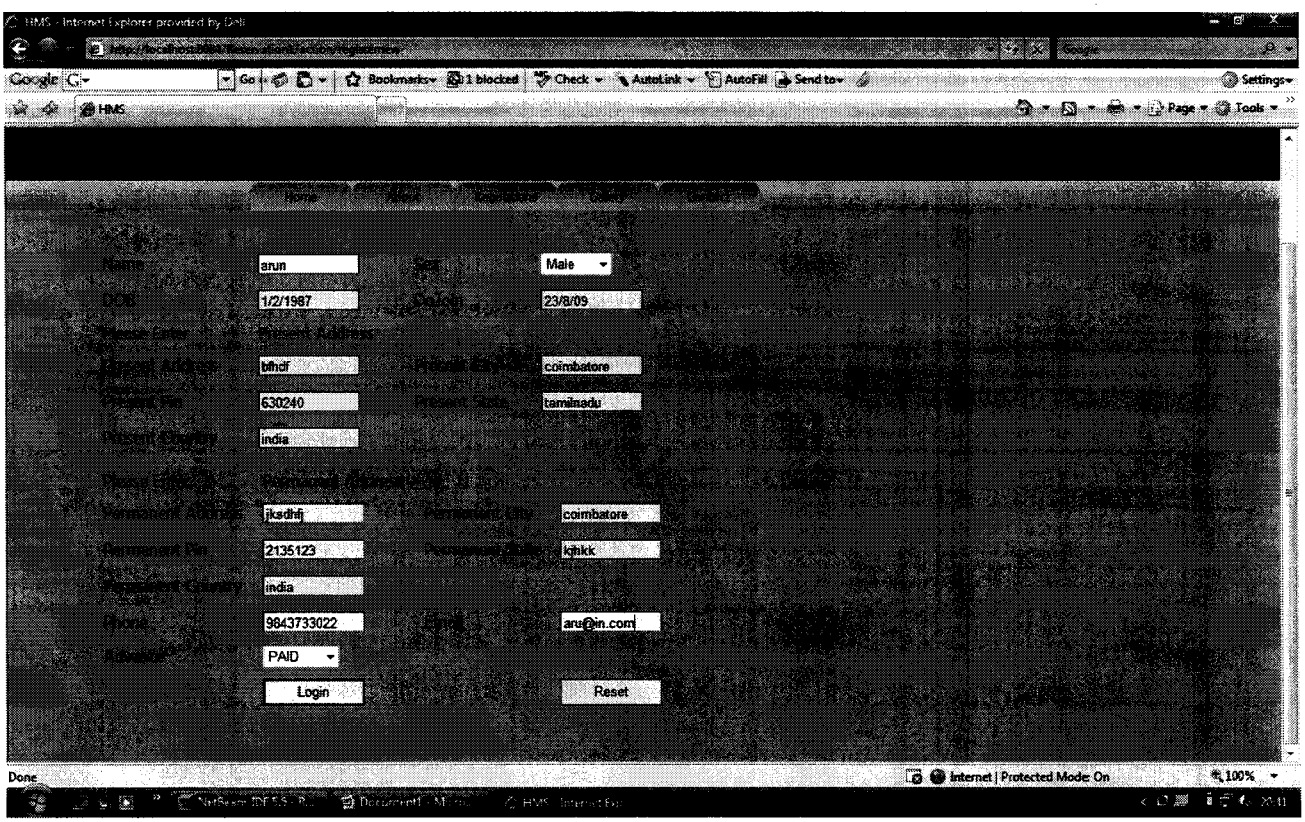
FORUM LIST


HMS - Internet Explorer provided by Dell
Google
Go
Bookmarks
1 blocked
Check
AutoLink
AutoFill
Send to
Settings
HMS
Page
Tools
Hostel Administration
Done
Internet | Protected Mode: On
100%

REGULATION


Hostel Administration
Regulations
Regulations
• NO SMOKING IN ROOMS.
• NO ALCOHOLIC DRINKS.
• NO VISITOR ALLOWED AFTER 11:00 PM.

STUDENT REGISTRATION



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	http://www.roseindia.net/struts/struts/index.shtml
	http://www.vaannila.com/struts-/struts-tutorial/struts-tutorial.html
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	http://sourceforge.net/
MySQL 5.0	http://dev.mysql.com/doc/refman/5.0/en/