CSE 2004 PROJECT REPORT

HOSTEL MANAGEMENT SYSTEM

SUBMITTED BY-

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D1 SLOT
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School of Computer Science and Engineering

DECLARATION

We hereby declare that the project entitled **"Hostel Management System"** submitted by us to the School of Computer Science and Engineering, VIT University, Vellore-14 in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology in Computer Science and Engineering** is a record of bonafide work carried out by us under the supervision of **Prof. Ramanathan L, Assistant Professor.** We further declare that the work reported in this project has not been submitted and will not be submitted, either in part or in full, for the award of any other degree or diploma of this institute or of any other institute or university.

Signature
Ojaswi Kumar (15BCE0030)

Signature
Sparsh Goel (15BCE0182)

School of Computer Science and Engineering

CERTIFICATE

The project report entitled "**Hostel Management System**" is prepared and submitted by **Ojaswi Kumar (Register No: 15BCE0030), Sparsh Goel (Register No: 15BCE0182).** It has been found satisfactory in terms of scope, quality and presentation as partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology in Computer Science and Engineering** in VIT University, India.

Guide
Ramanathan L.

Internal Examiner
(Name & Signature)

External Examiner
(Name & Signature)

ACKNOWLEDGEMENT

We have taken efforts in this project. However, it would not have been possible without the kind support and help of many individuals and organizations. We would like to extend our sincere thanks to all of them.

We are highly indebted to Prof. Ramanathan L, for his guidance and constant supervision as well as for providing necessary information regarding the project & also for his support in completing the project. We would like to express our gratitude towards Dean, SCOPE for allowing us to do this project. Finally, we would like to thank our college VIT UNIVERSITY for providing us with resources so that we could complete the project in the limited time frame.

CONTENTS

LIST OF TABLES

Table Name: Student

Attribute	Data Type	Constraint
Register Number	Varchar(9)	Primary Key
First Name	Varchar(20)	NOT NULL
Middle Name	Varchar(20)	
Last Name	Varchar(20)	NOT NULL
Date Of Birth	Date()	NOT NULL
Branch	Varchar(20)	NOT NULL
Sex	Char(1)	CHECK(SEX IN 'M','m','F','f')
Block Allotted	Varchar(20)	FOREIGN KEY
Room Allotted	VARCHAR(20)	
Mess Alloted	Varchar(20)	FOREIGN KEY
Phone number	Integer(10)	UNIQUE()
CGPA	DECIMAL(2,2)	NOT NULL
Total Fees	INTEGER(10)	NOT NULL

Table Name: Block

Attribute	Data Type	Constraint
Block Name	VARCHAR(20)	NOT NULL
Block Code	CHAR(1)	PRIMARY KEY
No of 6 bed rooms A/C	INTEGER(3)	
No. of 6 bed rooms Non A/C	INTEGER(3)	

No of 4 bed rooms A/C	INTEGER(3)	
No of 4 bed rooms Non A/C	INTEGER(3)	
No of 2 bed rooms A/C	INTEGER(3)	
No of 2 bed rooms Non A/C	INTEGER(3)	
No of 1 bed rooms A/C	INTEGER(3)	
No of 1 bed rooms Non A/C	INTEGER(3)	

Table Name: Mess

Attribute	Data Type	Constraint
Mess ID	INTEGER(5)	PRIMARY KEY
Caterer Name	VARCHAR(20)	NOT NULL
Mess Type	VARCHAR(20)	NOT NULL
Fees	INTEGER(10)	NOT NULL

Table Name: Rooms

Attribute	Data Type	Constraint
Room Type	VARCHAR()	PRIMARY KEY
Room Fees	INTEGER()	NOT NULL

Table name: Staff

Attribute	Data Type	Constraint
Staff ID	VARCHAR(10)	PRIMARY KEY
First name	VARCHAR(20)	NOT NULL
Last Name	VARCHAR(20)	NOT NULL
Designation	VARCHAR(10)	NOT NULL
Block Allotted	VARCHAR(10)	
Time in	INTEGER(10)	
Time Out	INTEGER(10)	

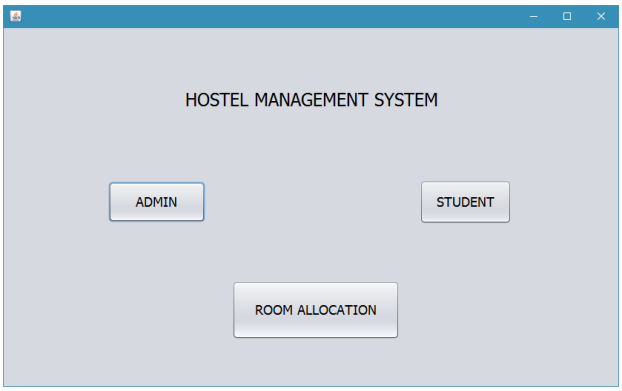
Table Name: Logins

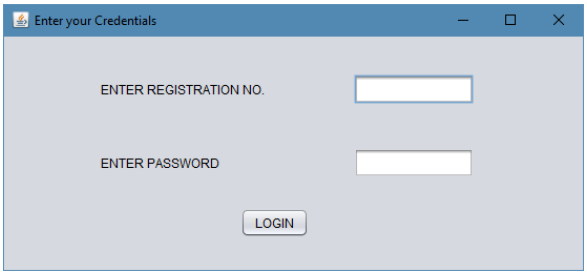
Attribute	Data Type	Constraint
Reg no	VARCHAR()	Foreign KEY
PASSWORD	VARCHAR()	NOT NULL

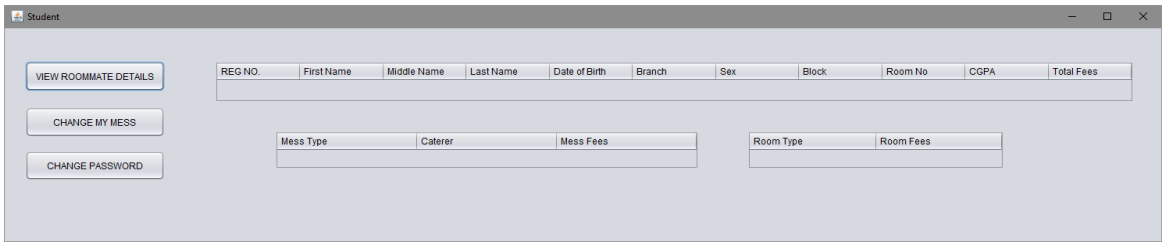
Table Name: Admin

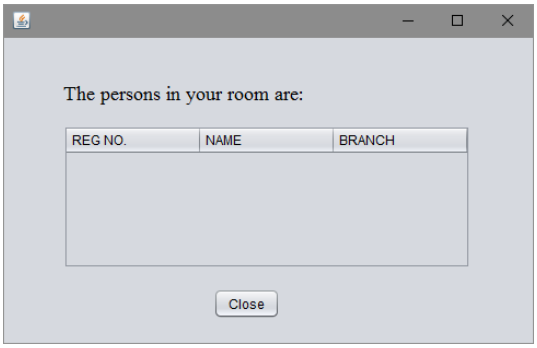
Attribute	Data Type	Constraint
ID	VARCHAR()	FOREIGN KEY
PASSWORD	VARCHAR()	NOT NULL

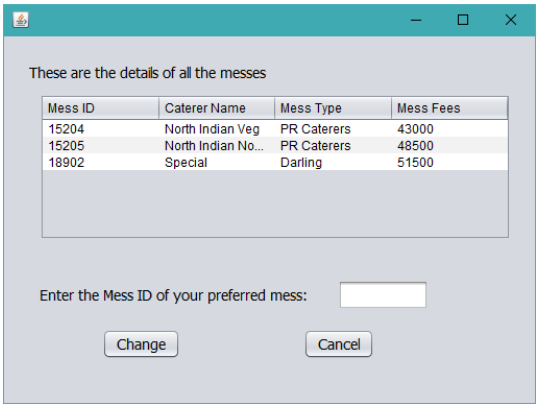
LIST OF FIGURES

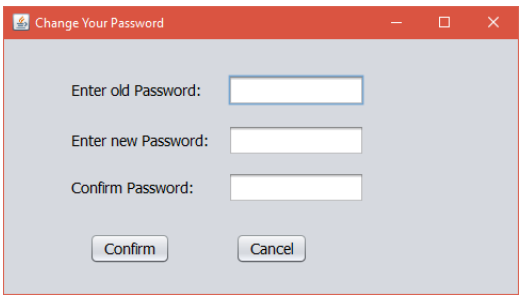


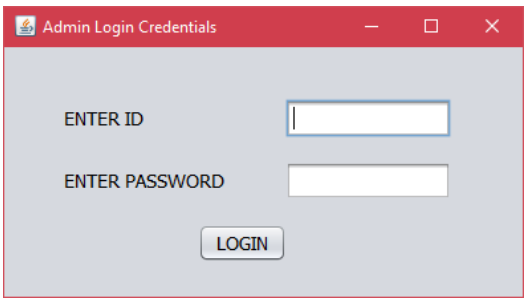


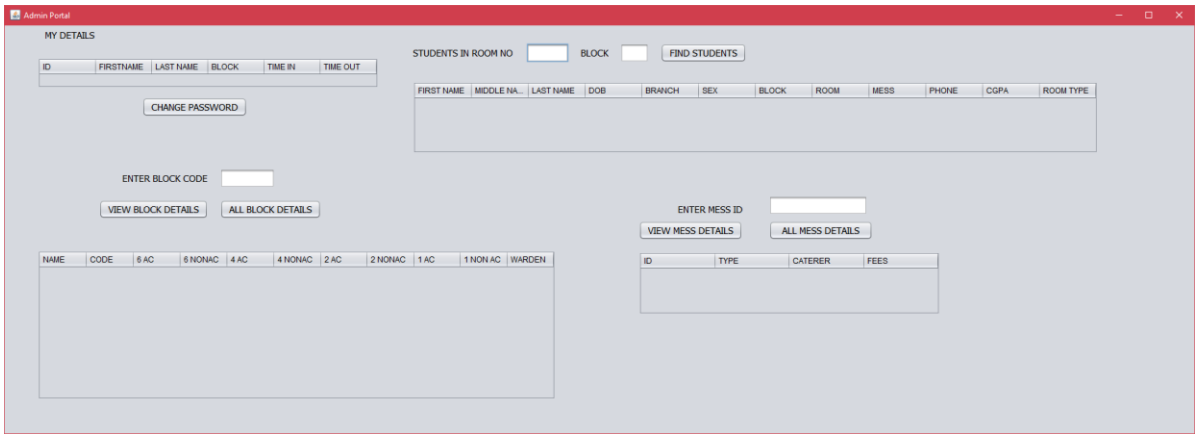


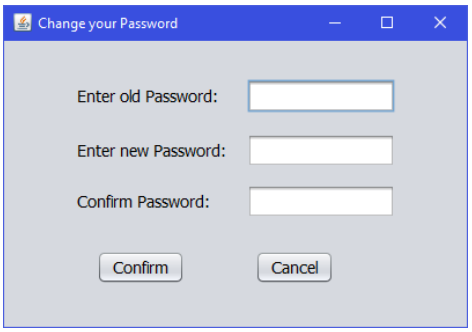


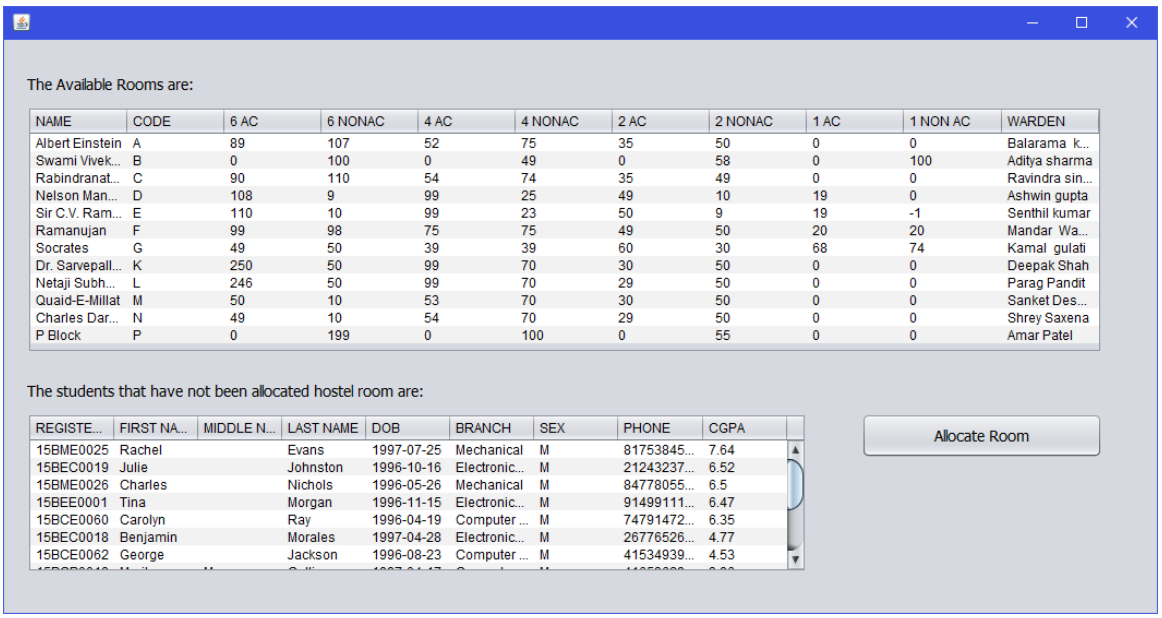












The Available Rooms are:

NAME	CODE	6 AC	6 NONAC	4 AC	4 NONAC	2 AC	2 NONAC	1 AC	1 NON AC	WARDEN
Albert Einstein	A	89	107	52	75	35	50	0	0	Balarama k...
Swami Vivek...	B	0	100	0	49	0	58	0	100	Aditya sharma
Rabindranat...	C	90	110	54	74	35	49	0	0	Ravindra sin...
Nelson Man...	D	108	9	99	25	49	10	19	0	Ashwin gupta
Sir C.V. Ram...	E	110	10	99	23	50	9	19	-1	Senthil kumar
Ramanujan	F	99	98	75	75	49	50	20	20	Mandar Wa...
Socrates	G	49	50	39	39	60	30	68	74	Kamal gulati
Dr. Sarvepall...	K	250	50	99	70	30	50	0	0	Deepak Shah
Netaji Subh...	L	246	50	99	70	29	50	0	0	Parag Pandit
Quaid-E-Millat	M	50	10	53	70	30	50	0	0	Sanket Des...
Charles Dar...	N	49	10	54	70	29	50	0	0	Shrey Saxena
P Block	P	0	199	0	100	0	55	0	0	Amar Patel

The students that have not been allocated hostel room are:

REGISTE...	FIRST NA...	MIDDLE N...	LAST NAME	DOB	BRANCH	SEX	PHONE	CGPA
15BME0025	Rachel		Evans	1997-07-25	Mechanical	M	81753845...	7.64
15BEC0019	Julie		Johnston	1996-10-16	Electronic...	M	21243237...	6.52
15BME0026	Charles		Nichols	1996-05-26	Mechanical	M	84778055...	6.5
15BEE0001	Tina		Morgan	1996-11-15	Electronic...	M	91499111...	6.47
15BCE0060	Carolyn		Ray	1996-04-19	Computer ...	M	74791472...	6.35
15BEC0018	Benjamin		Morales	1997-04-28	Electronic...	M	26776526...	4.77
15BCE0062	George		Jackson	1996-08-23	Computer ...	M	41534939...	4.53

Allocate Room

LIST OF ABBREVIATIONS

Abbreviation	Expansion
WWW	World Wide Web
GUI	Graphical user Interface
IDE	Integrated Development Environment
JDK	Java Development Kit
SQL	Structured Query Language
ER	Entity Relationship
A.C.	Air Condition
CGPA	Cumulative Grade Point Average
OS	Operating System

ABSTRACT

The hostel management system is an essential and integral part for any university so as to give the best facilities to students. It is very important for the university to have an effective hostel management system for efficient administration of the hostels. The Hostel Management System focuses on effective utilization of resources towards hostel and mess management thereby catering to the needs of students. Different universities have different administrative systems. Not much research work and research papers have been published regarding this topic. In the older days the system was not digital and the administration was done manually. The data was entered manually. Nowadays, the system has digitalized and the computer does most of the work. The hostels are allocated by the computer on the basis of certain conditions. In most of the cases the system is divided into two parts- the user and the admin. But all the systems are not completely perfect and user friendly. Every system has its own advantages and limitations. We were motivated to do this project as we wanted to make an application that is user friendly and simple. Also, being hostellers ourselves we thought that we can contribute and improve the system. We have taken the best parts of every system and used in our system. Our Hostel Management system provides the facility of allocation of rooms to students and to choose their roommates. The students are sorted on the basis of their CGPA. It also enables the student his/her details and also the details of his/her roommates. The admin has the option to view the details of any student of any block. He can also view the details of blocks and mess. The students can also update his mess as per his requirement. It also calculates the total fees of the students. The main page of the application asks the student/admin to login to see his/her details. They can also change their password.

In the future we want to increase the number of accounts and records. And in addition we also want to increase the number of operations of manipulation of data. We can increase the number of data entries and the operations and the data manipulation commands. If possible we can help our university to update its hostel management system by the help of our project.

1. Introduction

1.1. Theoretical Background

Every educational institution focuses on establishing good standards that contribute towards optimized hostel management system for their students. The Hostel Management System is one such system that focuses on effective utilization of resources towards hostel and mess management thereby catering to the needs of students. Hostel software module includes many features like fee collection, room allotment, room management as categorization of rooms on the basis of their CGPA.

1.2. Motivation

We were motivated to do this project as we wanted to make an application that is user friendly and simple. We wanted to make a Hostel Management System that helps us in the allocation of rooms and roommates. Also, being hostellers ourselves we thought that we can contribute and improve the system. We wanted to make a system that is equally useful for the admins in which they can see the student and block details.

1.3. Aim of the proposed Work

The aim of this project is to create a Hostel Management system for the admins as well as the students in which the students and the admins can see their details. The system is also used in the allocation of rooms to the students as per his/her choice. The system also aims to enable the student to update his/her mess. The supervisor can also view the details of any student.

1.4. Objective(s) of the proposed work

The Hostel Management System aims at automation of the following processes:

a. Allocating the rooms of students
b. Viewing the details of blocks of students by the supervisors.
c. Viewing the details of types of mess by the supervisors.

d. Registering and updating the mess for the students
e. Calculation of fees for the student.
f. Getting complete details of the students.
g. Getting complete details of the staff members.

1.5 Report Organisation

Hostel Management System is a very essential and crucial part of any college's subsystem. The need of this project was that we wanted to explore the methodology and the thinking as well as implementing process that goes into the development of such a system. However, our project is smaller as compared to real life systems and it has a few loopholes that can be fixed only with real-life data implementation but we understood so many concepts working on this project and now we can also relate tto the things happening in our own hostel systems.

2. Literature Survey

2.1. Survey and Summary of the Existing Models/Work

Authors	Method	Purpose	Advantages	Disadvantages
Emmanuel Adu Baffoe	System divided into two portions- User and administrator	To create efficient hostel management software	Easy to handle, low data redundancy	Less transparent
V.I.T. System	Model based on CGPA	To allocate rooms on the basis of students performance	Improved Classification accuracy.	Complex because of sorting of data.
Old Management systems	Data has to be entered manually.	Management software for small purposes	Simple data model	Time consuming and more strength and strain of

				manual labour needed, error prone
Muhammed Shaheer.k.a	Web based system	For fast software and to have cross platform compatibility	Good for large data and highly deployable. Highly secure.	Complex and Expensive
Sadiq Sohail, Rajadurai	Model based on geographical difference	Made for international universities and hostels	Classified and accurate data	Reduces diversity.

2.2 Summary/Gaps identified in the survey

There are a few models and work projects happening related to hostel management system by different universities. Some of the research paper are discussed here as an example.

In these research papers there are several topics which are related to advancing the data model of the system and used to improve the efficiency of the database handling. The speed should also be taken into account along with efficiency to make the system improvised and fast and also user friendly.

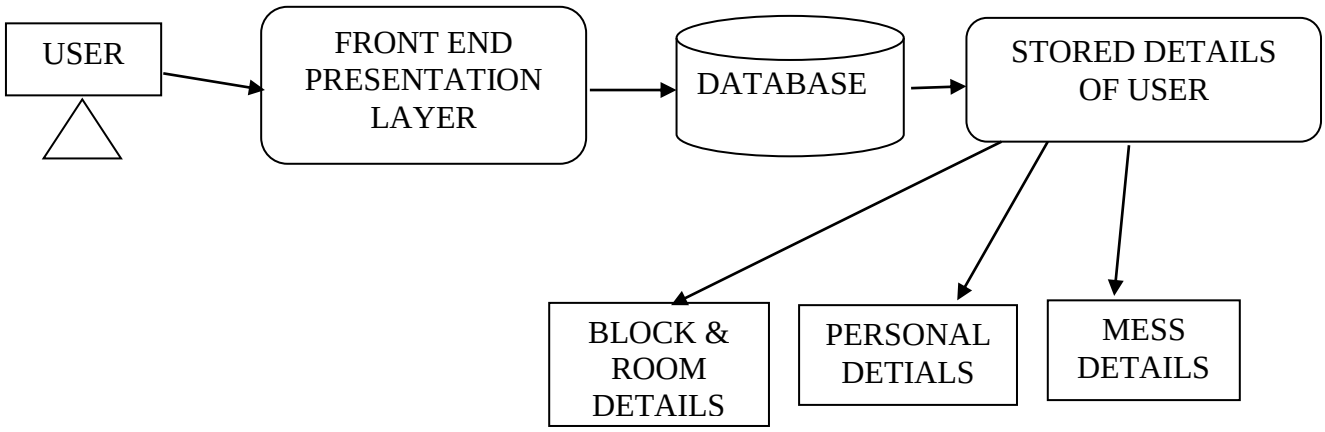
In the old models of hostel management system data was to be entered manually and was very slow and was not feasible. The hostel allocation system used by VIT is based on the principle of CGPA. The student gets priority on the basis of CGPA. The hostel allocation model of the Malaysian university is based on regional difference. People from the same region gets the same room. We have tried to combine the best parts of every model in our system.

3. Overview of the Proposed System

3.1 Introduction

Our Hostel Management system provides the facility of allocation of rooms to students and to choose their roommates. It also enables the student his/her details and also the details of his/her roommates. The admin has the option to view the details of any student of any block. He can also view the details of blocks and mess. The students can also update his mess as per his requirement. It also calculates the total fees of the students. The main page of the application asks the student/admin to login to see his/her details. They can also change their password.

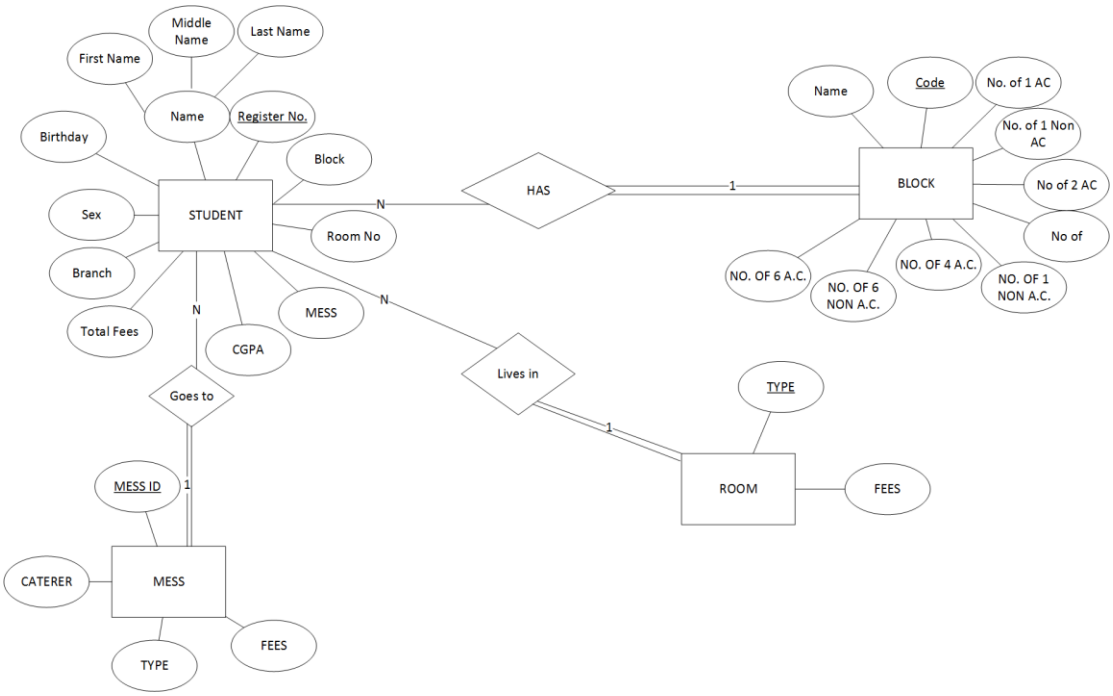
3.2 Framework, Architecture or Module for the Proposed System (with explanation)



In our proposed model of Database we are using java programming language using NetBeans software. This is our Frontend part. In the backend we have used MySQL software and wrote structured query language to create a Database. It is used primarily as a KEY STORE OF VALUE when the data are distributed among a large number of cases logical. We have connected our frontend and backend using JDBC drivers. The visitors having Windows operating system installed can access the data and this accessibility is provided by Frontend part.

The user logged in using his username and password. Now he can see his personal details in the GUI, and he can opt for the required changes.

3.3 Proposed System Model (ER Diagram)



4. Proposed System Analysis and Design(As Per IEEE Standard)

4.1. Introduction

There are certain rules of IEEE standard for writing different contents that a person may want to write it in the document and different rules for everything. Going through all the specifications, rules and formats that are valid in IEEE standard we are doing the requirement analysis of our project and found out the following results that are mentioned below.

4.2. Requirement Analysis

4.2.1. Functional Requirements

4.2.1.1. Product Perspective

The following ER diagram is an outline of the database model that we have created in our system and it is the 2 dimensional image of the model of the database. All the characters of database worked on the system is presented in this 2-D model and so. It has the content of weak entities, connection of different tables known as relationships and all the dependencies.

4.2.1.2. Product features

The application can be used to view the student details as well as the block and mess details. Student can also change their mess according to his/her need. It also provides the facility of room allocation to the students. The staff members of the hostel can view the details of a student by his room number.

4.2.1.3. User characteristics

There are two users in the system i.e. staff and student. The user(staff) of this system is someone who has the knowledge of the languages of database and has the ability to change the data entered in it by backend and also with the frontend. The user has the login and password for accessing the data in the database. The student can access the data in the front end and cannot see the backend.

4.2.1.4. Assumption & Dependencies

We have taken the assumption that the record is already been stored in the system so that it could be managed by the database admin. The data should be as according to the attributes that a user has to follow and the database admin should depend on the type of data filled in by the user and should note the actions of user on the application.

4.2.1.5. Domain Requirements

The domain requirements of the proposed system is that the group of persons handling and manipulating the database should have basic knowledge of JDBC driver and how it has been used for connecting the frontend with backend and how the operations of manipulation is making changes in the database.

4.2.1.6. User Requirements

The user using the database need to have knowledge of PC, internet, how can a person use the social network site accordingly and how to make one’s identity that reflect yourself in front of everyone, making no harm to anyone by any means.

4.2.2. Non Functional Requirements

4.2.2.1. Product Requirements

4.2.2.1.1. Efficiency (in terms of Time and Space)

The efficiency of a database model is determined by how much space it is taking and how much time it is taking to for manipulating and accessing the data stored in the database. In our system we are using about 200 entries of 8 tables so it is actually space efficient and we have used MySQL database which is quite fast for this this number of entries and it is time efficient as we can access all the tables and manipulate data in it within fraction of seconds.

4.2.2.1.2. Reliability

The data that we have used in these tables have resemblances to the real data that of a university and the information provided by us is completely reliable and complete and by inspecting the operations created by us we can get the glances of the data reliability. In the case of system crash, the data will remain intact and secure.

4.2.2.1.3. Portability

The database we have created using MySQL and NetBeans is developed in such an environment that it is portable in any windows system and all the files and all the supporting files we have created in this project is portable and easily carried out in any windows operating system.

4.2.2.1.4. Usability

The following project can be used by any database admin of the university who has permission to change and view the data entered by users and maintain the database of their accounts and if how situation arises can manipulate and delete their accounts. It can be used by anyone who have the login password.

4.2.3. Engineering Standard Requirements (Explain the applicability for your work w.r.to the following operational requirement(s))

- Economic

The application is completely free of cost and the software used are also open source software available free on the internet. This project is of great economic importance to

the university as it doesn’t require any money to operate. Only 2-3 people are required to maintain the database.

- Environmental

The project causes no harm to the environment and since it is a digital software, all the data is stored in the computer which means no pen and paper is needed.

- Social

The hostel management system has positive social impacts on the university. The people can see each other details and get information about others.

- Political

It has no negative political applications and cannot be used for political causes.

- Ethical

Since it requires a username and a password to login to the application, it is ethically safe. No one can hack into the database. Only the students and the staff members who are a part of the university have a username and a password.

- Health and Safety

The project has no bad effects on health and is completely safe. An effective hostel management system contributes to the safety of their students.

- Sustainability

The project is sustainable as every college needs an effective hostel management system for effective management. This project has sustainable use for the college and if possible we will make it more complex and for more sustainability.

- Inspectability

Our project sees each and every aspect of the consequences and results in a detailed manner.

4.2.4. System Requirements

4.2.4.1. H/W Requirements(details about Application Specific Hardware)

For NetBeans:

Processor: 2.6 GHz Intel Pentium IV or equivalent

Memory: 2 GB

Disk space: 1 GB of free disk space

For MySQL: Windows 7 and above

4.2.4.2. S/W Requirements (details about Application Specific Software)

NetBeans has been used for the GUI.

NetBeans IDE runs on the Java Development Kit (JDK) which consists of the Java Runtime Environment and developer tools for compiling, debugging, and running applications written in the Java language.

The tested JDK for this release is JDK 8u60 for Windows, Linux, and OS X. The 8.1 version of the IDE cannot be installed or run using JDK 6.0.

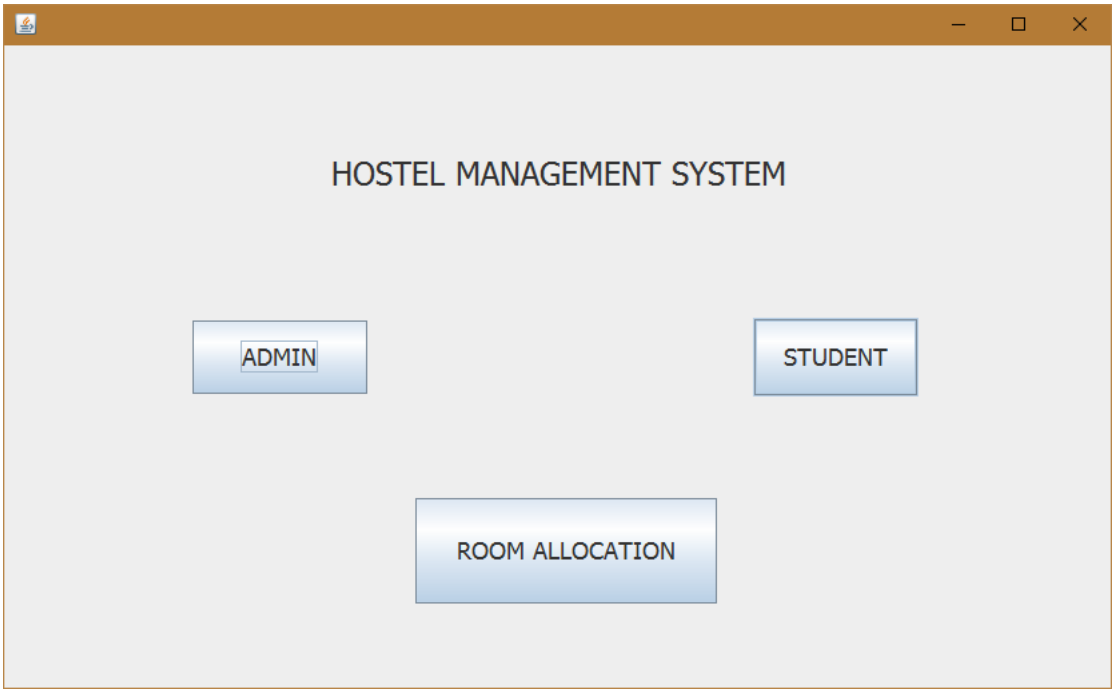
The database used is MySQL which is an open source software

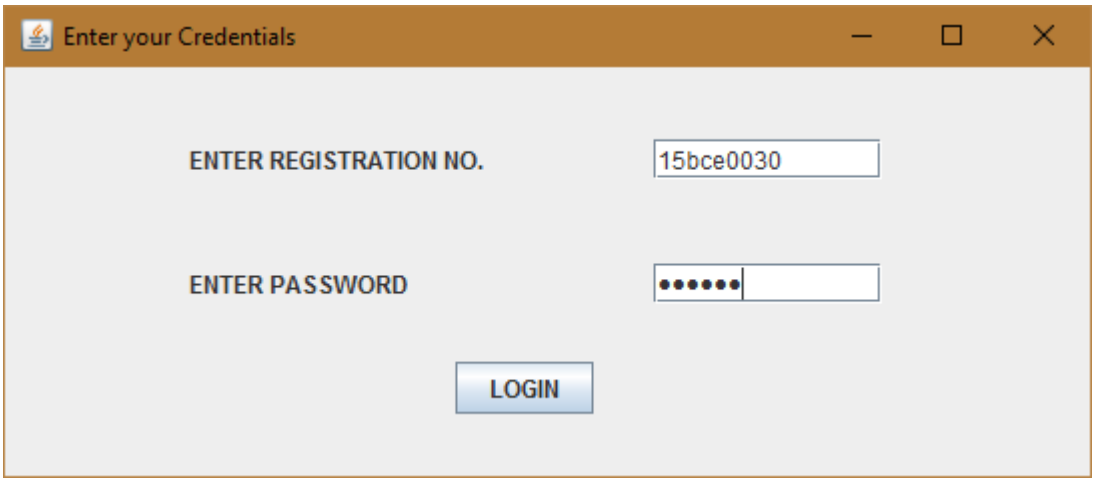
Requirement for MySQL:

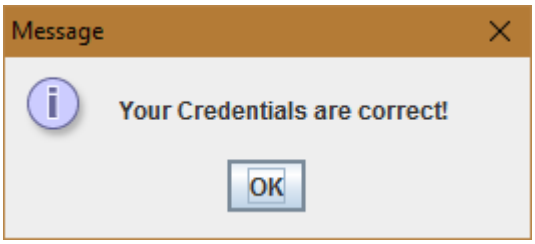
- Microsoft .NET 4.0 Framework
- Microsoft Visual C++ 2013 Redistributable Package (MSVC2013)
- MS Word, Microsoft Visio are also used for the completion of the project.

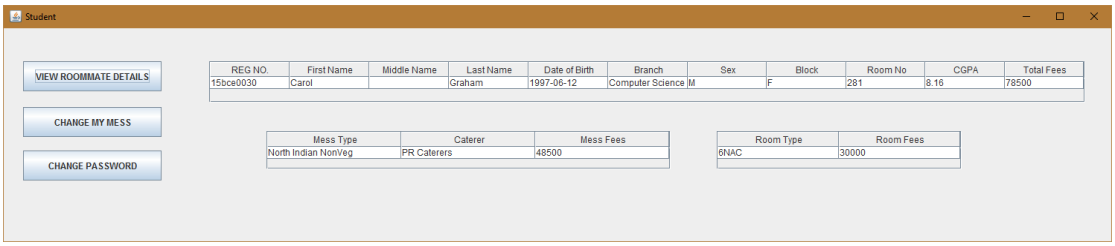
5. Results and Discussion (As Per IEEE Standard)

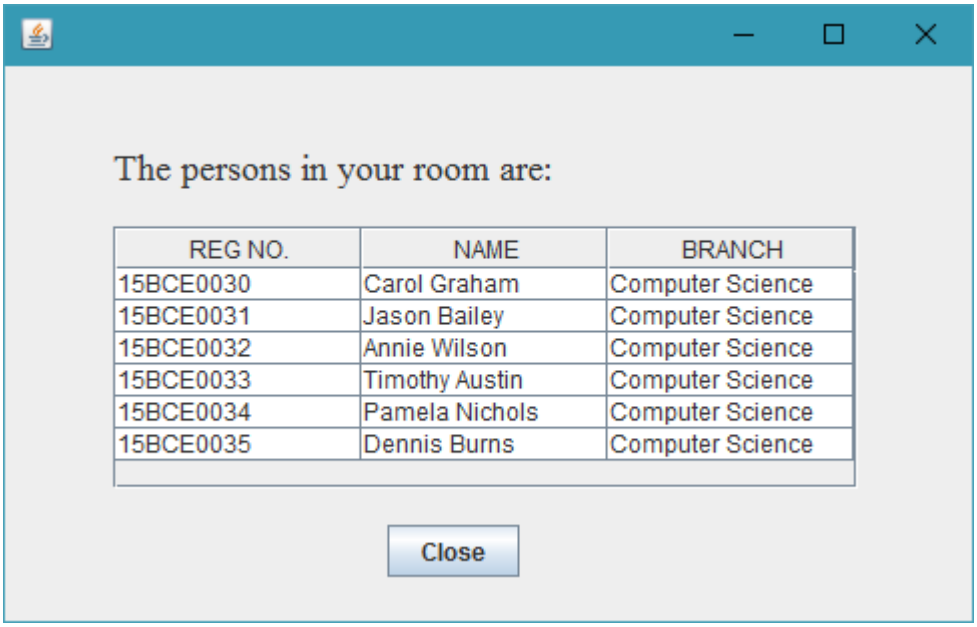
5.1. Sample Test Cases(Use standard template for test cases refer Annexure - II)

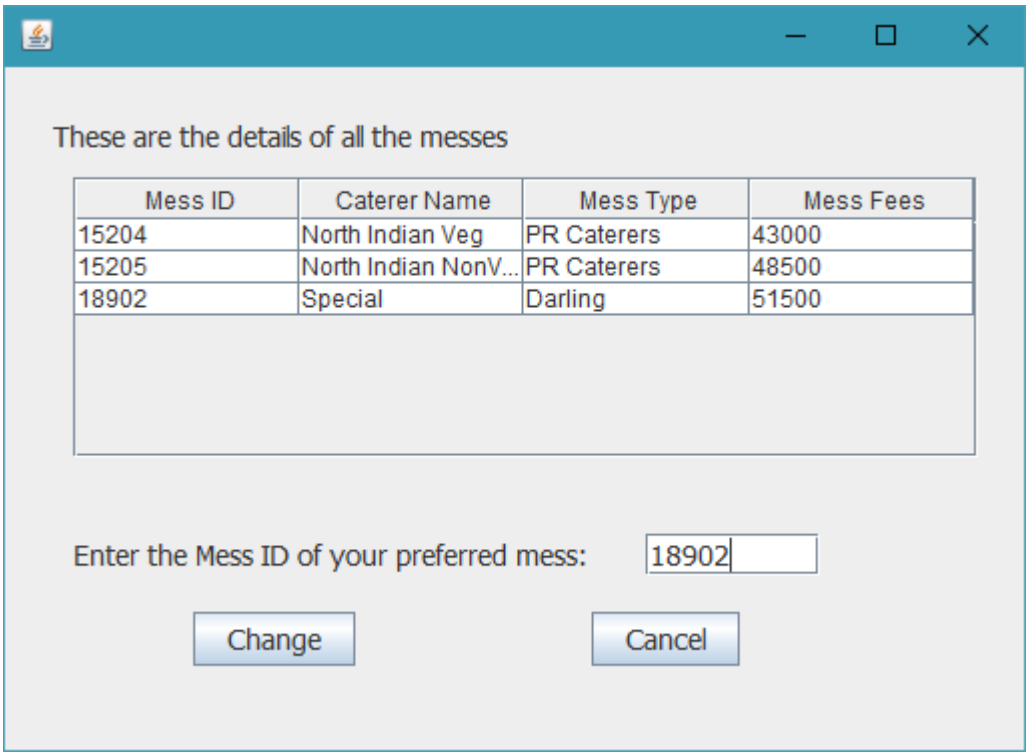

HOSTEL MANAGEMENT SYSTEM
ADMIN
STUDENT
ROOM ALLOCATION

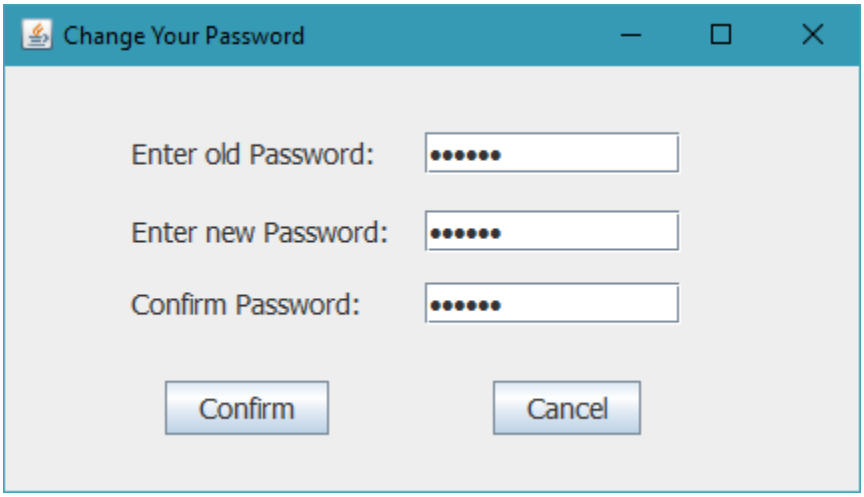

Enter your Credentials
ENTER REGISTRATION NO.
15bce0030
ENTER PASSWORD
LOGIN

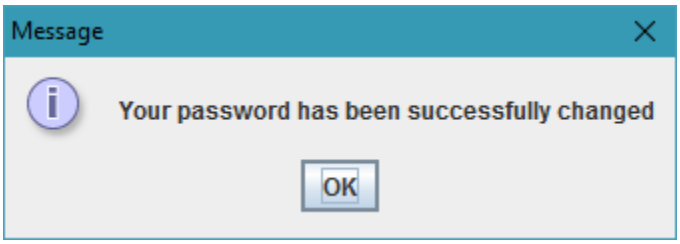

Message
Your Credentials are correct!
OK

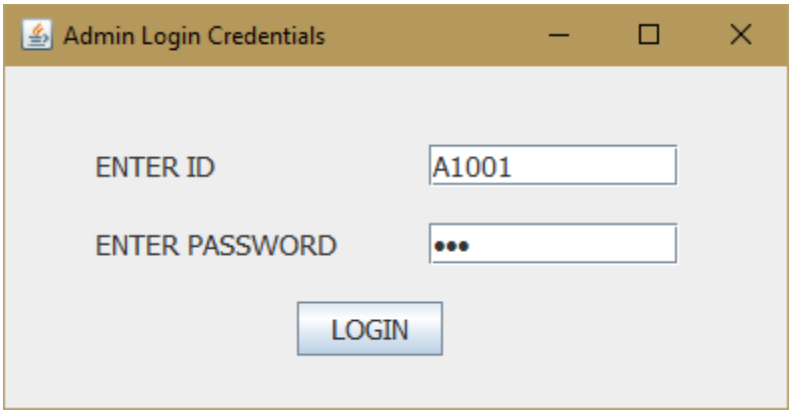

Student
VIEW ROOMMATE DETAILS
CHANGE MY MESS
CHANGE PASSWORD
REG NO. | First Name | Middle Name | Last Name | Date of Birth | Branch | Sex | Block | Room No | CGPA | Total Fees
15bce0030 | Carol | | Graham | 1997-06-12 | Computer Science | M | F | 281 | 8.16 | 78500
Mess Type | Caterer | Mess Fees
North Indian NonVeg | PR Caterers | 48500
Room Type | Room Fees
6NAC | 30000

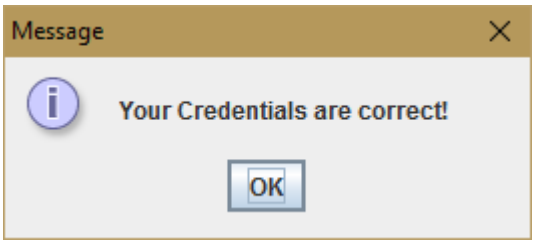

The persons in your room are:
REG NO.
NAME
BRANCH
15BCE0030
Carol Graham
Computer Science
15BCE0031
Jason Bailey
Computer Science
15BCE0032
Annie Wilson
Computer Science
15BCE0033
Timothy Austin
Computer Science
15BCE0034
Pamela Nichols
Computer Science
15BCE0035
Dennis Burns
Computer Science
Close

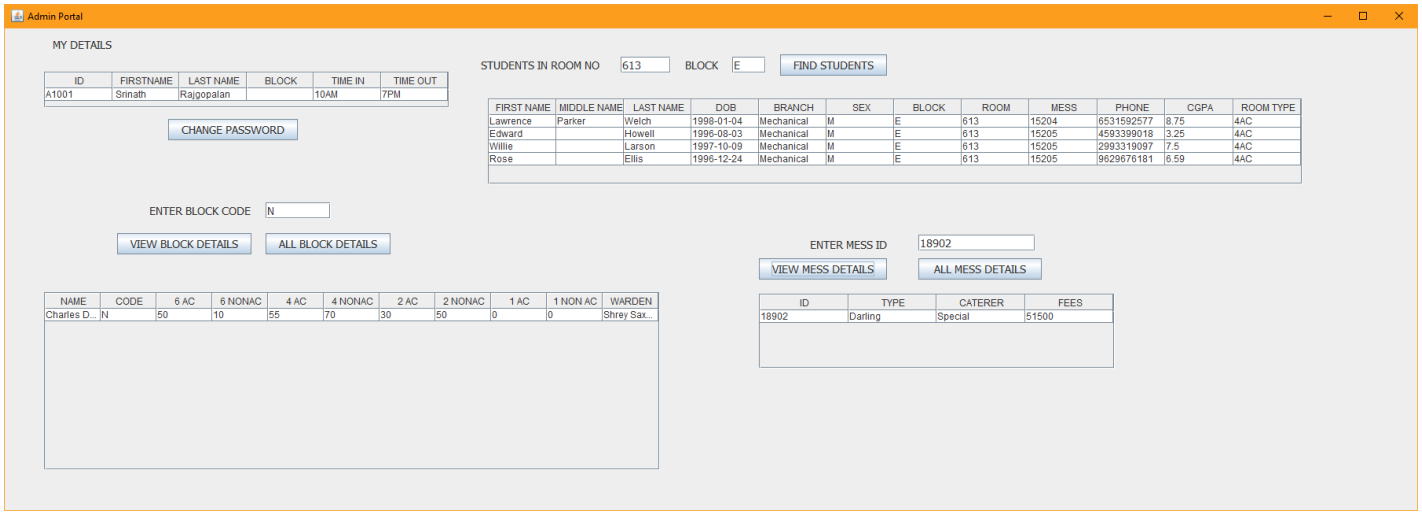

These are the details of all the messes
Mess ID
Caterer Name
Mess Type
Mess Fees
15204
North Indian Veg
PR Caterers
43000
15205
North Indian NonV...
PR Caterers
48500
18902
Special
Darling
51500
Enter the Mess ID of your preferred mess:
18902
Change
Cancel

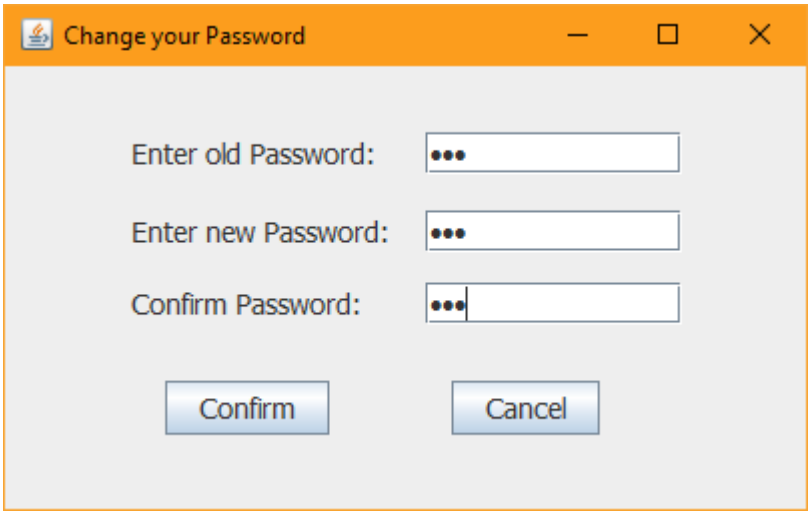

Change Your Password
Enter old Password:
Enter new Password:
Confirm Password:
Confirm
Cancel

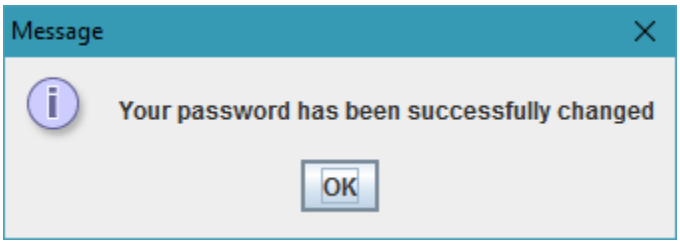

Message
Your password has been successfully changed
OK


Admin Login Credentials
ENTER ID
A1001
ENTER PASSWORD
LOGIN


Message
Your Credentials are correct!
OK







5.2. Summary of the Result

The above mentioned hostel management system provides the facility of allocation of rooms to the students and also changing their respective mess as seen by the test cases. The user (student/staff) is also able to change his password and view his/her details. The admin can view student details according to his/her room and can also view the block and mess details. Overall this is user friendly application which serves all the purpose of a hostel management system.

6. Conclusion, Limitations and Scope for future Work

The work that we have done is according to our expectations. The application is able to serve the purpose of a hostel management system. In conclusion we also want to add that while doing the project we have learnt so many new things like JDBC which was very useful in the completion of this project. We also got to know different ways to handle and implement the database by frontend and also by the backend. In future also if we have the chance we can improve and expand our project which could be of use to the university.

The limitation of our project is that the data of the students is not added to the database by the front end. It is added directly at the back end. It is also very small database of accounts as compared to the hostels of the real universities, but in future we also want to increase the number of accounts. And in addition we also want to increase the number of operations of manipulation of data.

The future scope of this project is that we can increase the number of data entries and the operations and the data manipulation commands. If possible we can help our university to update its hostel management system by the help of our project.

References

www.w3schools.com

https://netbeans.org/competition/win-with-netbeans/mysql-client.html#db02

http://www.tutorialspoint.com/jdbc/jdbc-create-tables.htm

http://www.codejava.net/java-se/jdbc