Summer Training Project Report

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ACKNOWLEDGMENT

I am highly thankful to NIIT. for imparting training on "Java" and providing with his guidance and support through out the training period. I hope that I can build upon the experience and knowledge that I have gained and make a valuable contribution towards this industry in coming.

ABSTRACT

My purpose in developing this application was to provide a very simple interface to the requirement that will be easy to navigate and operate, proper record keeping and reporting, and an application that can be implemented on desktop or client/server architecture i.e. providing with the following features:
* Highly user-friendly
* Cross-platform
* Easy-to-use
* Tested system to track unnoticed error
* Data entry restricted to valid domains (to avoid errors)

A desktop application aimed to manage hostel and all the related clerical work. The application was made using Java SE, Java FX and MySQL for Database. This was a personal project made during summer training tenure.

INTRODUCTION

Hostel Management System is an application software which aims at the computerization of hostel management letting the complete process of allotment and its management be dependent on computer. As the working of any hostel is almost same, I've chosen our very own "aravli hostel" to present the software and its design.
Without computers, everything goes on registers causing a lot of paper work with very less efficiency, which is where this software can dramatically improve the overall management.

User Modules
There are mainly two types of users, the first one is the head clerk, and the other are the mess accountants.

Hostel Accountant
This user account is meant for the head clerk who maintains the complete database of students, maintains the room allotments and the payment of bills.
The privileges allowed to the head clerk/hostel accountant are:
* Allot a new room
* Empty an allotted room
* Swap rooms between students
* Shift student to empty room
* Make an adjustment
* View or Update Details of student
* Receive payments of Mess Bill
* Change Password
* View Activity Log
* Search through complete database

Mess Accountants

There are mess accountants for each block of the hostel. These users are meant for the mess accountants who keep the record of mess charges for each room number.
The activities the mess accountant can do:
* Search through complete database
* Add amount to account
* Subtract amount from account
* Change Password
* View Activity Log

These users have been explained in detail further in the report, about their privileges activities and over all functions.
Privileges of Hostel Accountant

Allotment of New Room
Clerk can allot a new seat to a student using this action button clicking on which opens up the form to allot new room.
The form expects user to select the block and room number to allot through a combo box which shows the list of empty rooms only.
The room can be allotted only when the valid details are filled. For example:

- Mobile number needs to be a 10 digit number.
- Date should be a valid one.
- Roll No., Vehicle No. and Fee receipt number should be unique.

Emptying of Rooms
This allows admin to empty some particular seat, or the entire block or the entire hostel.
The form expects user to select radio button of the action to be performed.
Further selecting the Block or Room No. as per the radio button selected.
The room can be emptied only when there is no mess bill pending for the room.

Swapping of Rooms

This allows admin to swap seats between students letting the complex process of information interchange be done by computer itself.
The form expects user to select the two students and simply press the swap button to do rest of the job.
The pending mess bill also goes along with the students.

Shifting to Empty Room
This allows admin to shift a student to an empty seat in the hostel.
The form expects user to select the student to shift and the available empty room to which student is to be shifted and pressing the shift button shifts the student to the room.
The pending mess bill also goes along with the student.

Making an adjustment
This allows admin to make some adjustment in some room. Only one student can be adjusted in one single room.
The form expects user to select the room into which the adjustment is to be made, and the seat allotted to becomes the room number suffixed with letter “E”.
The rest of the adjustment process is same as the allotment.

Viewing and Updating Student Details
This allows admin to update details of student.
The form expects user to select the student from the left table which shows the students according to search box.
As soon as user selects the student, the pane slides to right and clicking on update button will allow updating details.

Receiving the Mess Bill Payment
This allows admin to receive payments of mess bill of any student.
The student can be searched and click to open details page which has an option to pay pending bill clicking on which will open up the dialog box for the same.
Simply enter the amount, change will be adjusted next time.

Searching Through Database

The application is provided with an all in one Search Engine for the complete database of hostel which lets you search students as you type.
You can search by Name of student, Roll Number, Room Number, City, State, and Vehicle Number. The results will be searched out as you type.

Two Keywords lets you shortlist students:
“Adjust” shows the students who are adjusted.
“Pending” shows the students who have some bill pending.

Changing Password
This dialog box lets you change the password of the user.
The form expects user to fill up the old password, and the new one twice.
Few conditions have been applied for the new password to be accepted:

- Maximum Password Length is 20.
- Minimum Password Length is 5.
- Password is Case-Sensitive.

Privileges of Mess Accountant
Adding and Subtracting Amount
The mess accountant can simply add amount in the add column to any room, and similarly subtract some amount.
The form expects user to select the student and press enter in subsequent column which changes the cell to textbox and hence letting the user to add/subtract amount.

Searching
The mess accountant can search through the database using the search box at the top of the form. The search can only be done by room number.

Overview of System

SYSTEM REQUIREMENTS:

The various hardware requirements are :

PROCESSOR : Intel Pentium 2 and above

PROCESSOR speed : 1.76 GHZ or above

RAM : 32 MB or above

HDD : 40 MB or above

The various software requirements are :

PLATFORM : any os with java installed

DATABASE : my SQL

OTHER : javafx plugin installed

SYSTEM ANALYSIS

In this phase here we make the analysis of the system .That means in this phase we do the study of the system which means what is the problem definition of the system .Alternate system solutions are

studied and recommendations are made about omitting the resources required designing the system .

Here in this phase apart from the problem definition we make the determination system performances the identifications and evaluations of the potential system solution and analysis of alternate solutions .

FEASIBILTY STUDY
Test of feasibility are
-operational feasibility
-technical feasibility
-economic feasibility

DESIGN SYSTEM
The system design starts by converting a logical model of the system into physical model . Physical mode

The system design starts by converting the logical model of the system into physical model. Physical model represents the transactions that take place in the system and physical components that are involved ; the documents for models namely , flow chart for the program.

TECHNOLOGY USED

JAVA SE

Java Platform, Standard Edition or **Java SE** is a computing platform for development and deployment of portable code for desktop and server environments. Java SE was formerly known as **Java 2 Platform, Standard Edition** or **J2SE**.

The platform uses Java programming language and is part of the Java software-platform family. Java SE defines a range of general-purpose APIs—such as Java APIs for the Java Class Library—and also includes the Java Language Specification and the Java Virtual Machine Specification. One of the most well-known implementations of Java SE is Oracle Corporation's Java Development Kit (JDK).

The platform was known as *Java 2 Platform, Standard Edition* or *J2SE* from version 1.2, until the name was changed to *Java Platform, Standard Edition* or *Java SE* in version 1.5. The "SE" is used to distinguish the base platform from the Enterprise Edition (Java EE) and Micro Edition (Java ME) platforms. The "2" was originally intended to emphasize the major changes introduced in version 1.2, but was removed in version 1.6. The naming convention has been changed several times over the Java version history. Starting with J2SE 1.4 (Merlin), Java SE has been developed under the Java Community Process, which produces descriptions of proposed and final specifications for the Java platform called Java Specification Requests (JSR). JSR 59 was the umbrella specification for J2SE 1.4 and JSR 176 specified J2SE 5.0 (Tiger). Java SE 6 (Mustang) was released under JSR 270.

Java Platform, Enterprise Edition (Java EE) is a related specification that includes all the classes in Java SE, plus a number that are more useful to programs that run on servers as opposed to workstations.

Java Platform, Micro Edition (Java ME) is a related specification intended to provide a certified collection of Java APIs for the development of software for small, resource-constrained devices such as cell phones, PDAs and set-top boxes.

The Java Runtime Environment (JRE) and Java Development Kit (JDK) are the actual files downloaded and installed on a computer to run or develop Java programs, respectively.

JAVA FX

JavaFX is a software platform for creating and delivering desktop applications, as well as rich internet applications (RIAs) that can run

across a wide variety of devices. JavaFX is intended to replace Swing as the standard GUI library for Java SE, but both will be included for the foreseeable future. JavaFX has support for desktop computers and web browsers on Microsoft Windows, Linux, and macOS.

Before version 2.0 of JavaFX, developers used a statically typed, declarative language called JavaFX Script to build JavaFX applications. Because JavaFX Script was compiled to Java bytecode, programmers could also use Java code instead. JavaFX applications could run on any desktop that could run Java SE, on any browser that could run Java EE, or on any mobile phone that could run Java ME.

JavaFX 2.0 and later is implemented as a "native" Java library, and applications using JavaFX are written in "native" Java code. JavaFX Script has been scrapped by Oracle, but development is being continued in the Visage project. JavaFX 2.x does not support the Solaris operating system or mobile phones; however, Oracle plans to integrate JavaFX to Java SE Embedded 8, and Java FX for ARM processors is in developer preview phase.

On desktops, JavaFX supports Windows Vista, Windows 7, Windows 8, Windows 10, macOS and Linux operating systems. Beginning with JavaFX 1.2, Oracle has released beta versions for OpenSolaris. On mobile, JavaFX Mobile 1.x is capable of running on multiple mobile operating systems, including Symbian OS, Windows Mobile, and proprietary real-time operating systems.

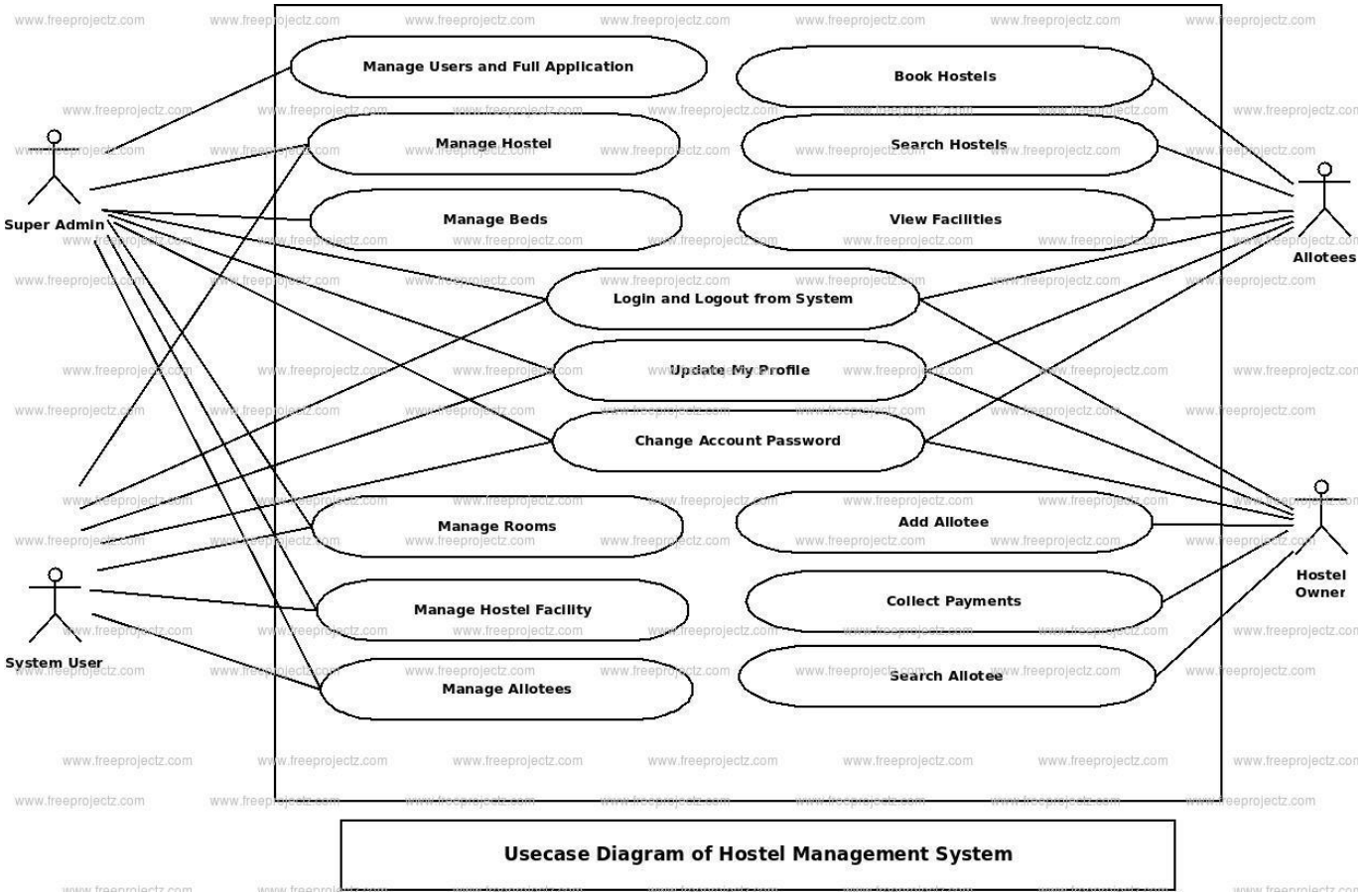
MY SQL

MySQL is an open-source relational database management system (RDBMS). Its name is a combination of "My", the name of co-founder Michael Widenius's daughter,and "SQL", the abbreviation for Structured Query Language. The MySQL development project has

made its source code available under the terms of the GNU General Public License, as well as under a variety of proprietary agreements. MySQL was owned and sponsored by a single for-profit firm, the Swedish company MySQL AB, now owned by Oracle Corporation. For proprietary use, several paid editions are available, and offer additional functionality.

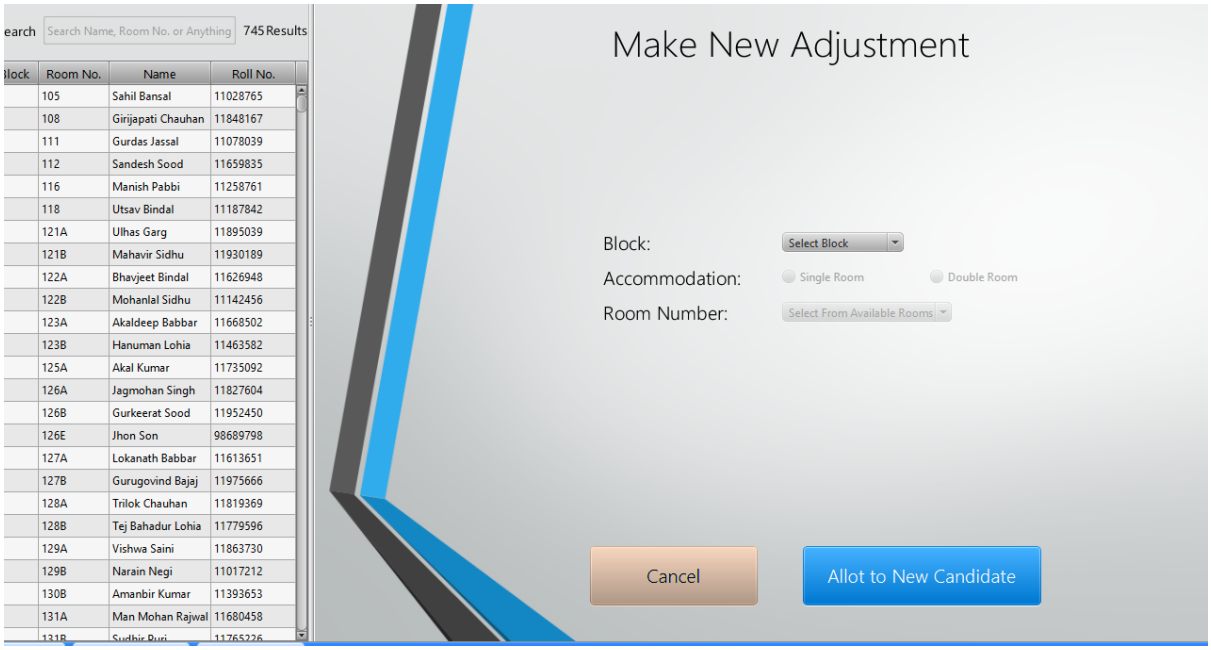
MySQL is a central component of the LAMP open-source web application software stack (and other "AMP" stacks). LAMP is an acronym for "Linux, Apache, MySQL, Perl/PHP/Python". Applications that use the MySQL database include: TYPO3, MODx, Joomla, WordPress, phpBB, MyBB, and Drupal. MySQL is also used in many high-profile, large-scale websites, including Google (though not for searches), Facebook, Twitter, Flickr, and YouTube.

USE CASE



Usecase Diagram of Hostel Management System

SCREEN SHOTS


earch
Search Name, Room No. or Anything
745 Results
Block
Room No.
Name
Roll No.
105 Sahil Bansal 11028765
108 Girijapati Chauhan 11848167
111 Gurdas Jassal 11078039
112 Sandesh Sood 11659835
116 Manish Pabbi 11258761
118 Utsav Bindal 11187842
121A Ulhas Garg 11895039
121B Mahavir Sidhu 11930189
122A Bhavjeet Bindal 11626948
122B Mohanlal Sidhu 11142456
123A Akaldeep Babbar 11668502
123B Hanuman Lohia 11463582
125A Akal Kumar 11735092
126A Jagmohan Singh 11827604
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126E Jhon Son 98689798
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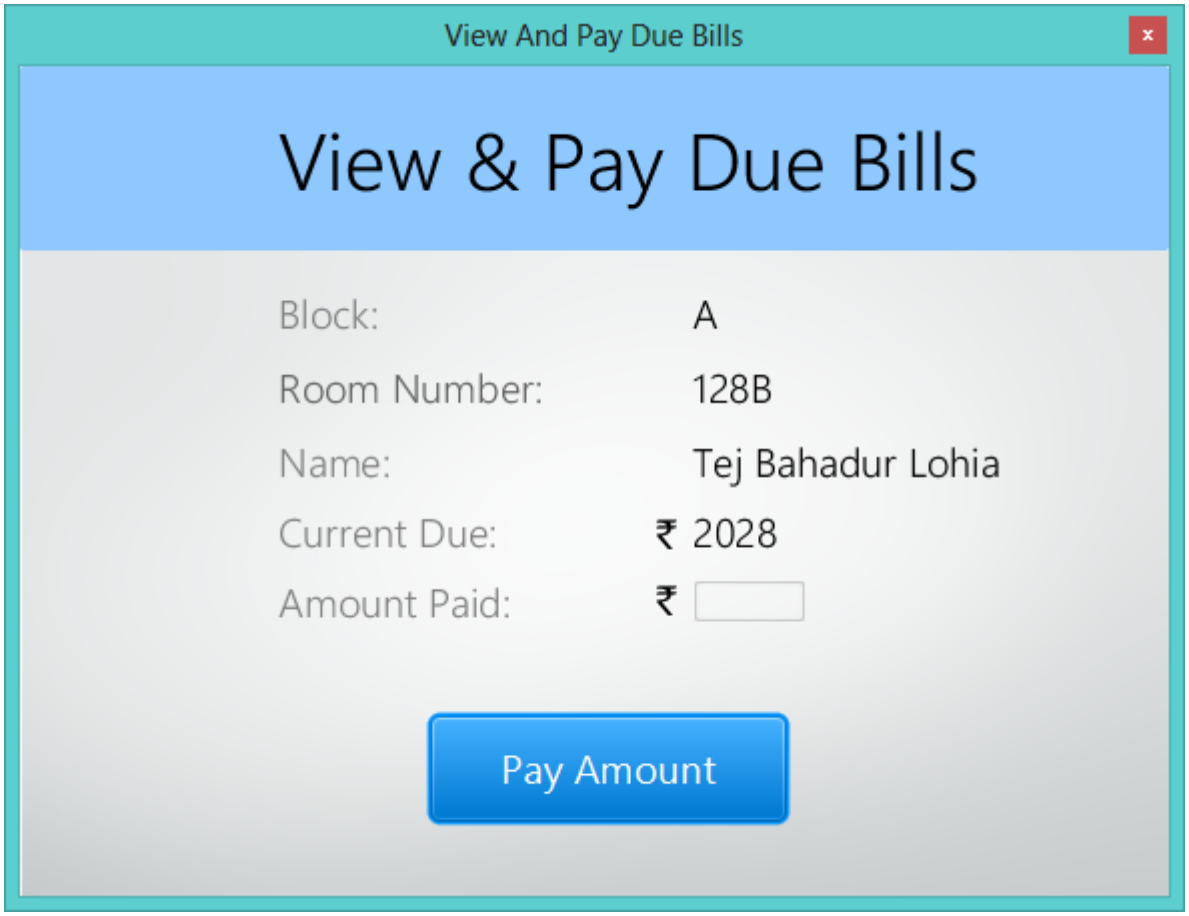
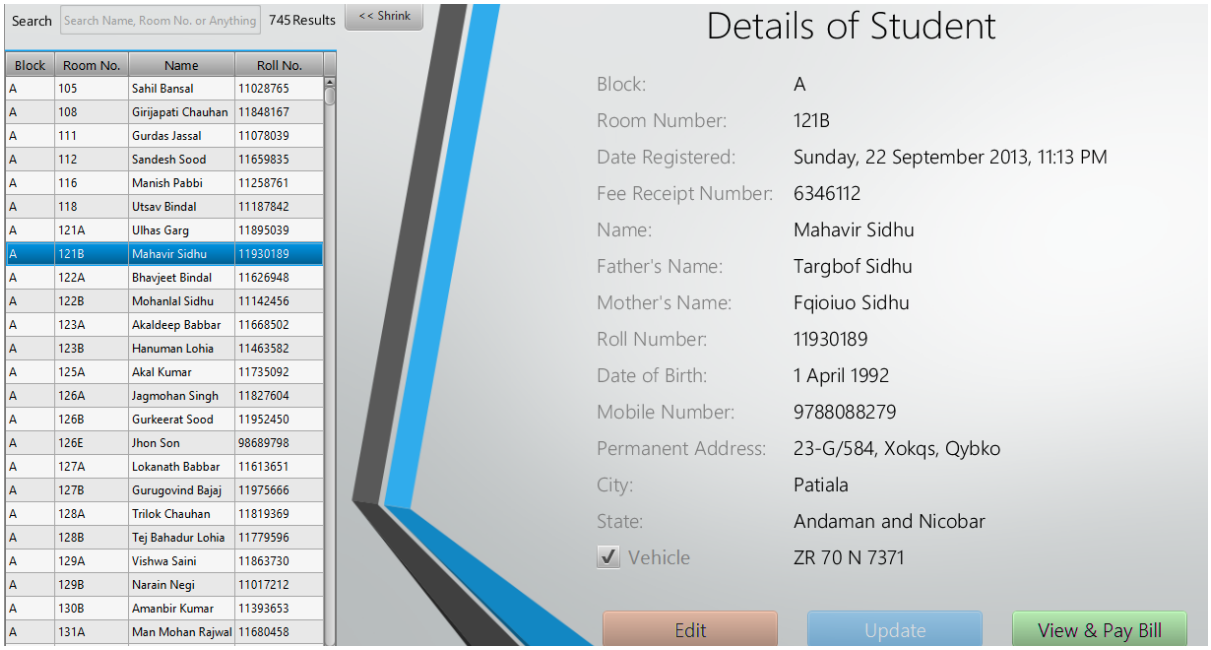
127B Gurugovind Bajaj 11975666
128A Trilok Chauhan 11819369
128B Tej Bahadur Lohia 11779596
129A Vishwa Saini 11863730
129B Narain Negi 11017212
130B Amanbir Kumar 11393653
131A Man Mohan Rajwal 11680458
Make New Adjustment
Block:
Select Block
Accommodation:
Single Room
Double Room
Room Number:
Select From Available Rooms
Cancel
Allot to New Candidate


View And Pay Due Bills
View & Pay Due Bills
Block: A
Room Number: 128B
Name: Tej Bahadur Lohia
Current Due: ₹ 2028
Amount Paid: ₹
Pay Amount


Search
Search Name, Room No. or Anything
745 Results
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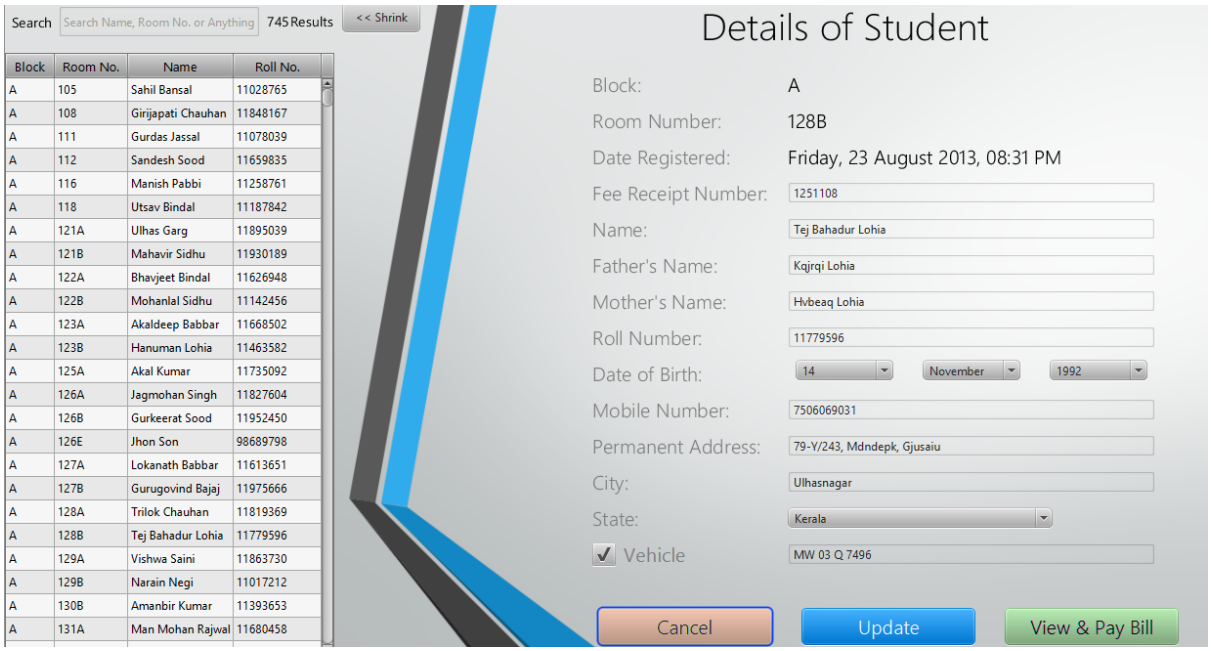
A 129B Narain Negi 11017212
A 130B Amanbir Kumar 11393653
A 131A Man Mohan Rajwal 11680458
Details of Student
Block: A
Room Number: 121B
Date Registered: Sunday, 22 September 2013, 11:13 PM
Fee Receipt Number: 6346112
Name: Mahavir Sidhu
Father's Name: Targbof Sidhu
Mother's Name: Fqioiuo Sidhu
Roll Number: 11930189
Date of Birth: 1 April 1992
Mobile Number: 9788088279
Permanent Address: 23-G/584, Xokqs, Qybko
City: Patiala
State: Andaman and Nicobar
Vehicle ZR 70 N 7371
Edit
Update
View & Pay Bill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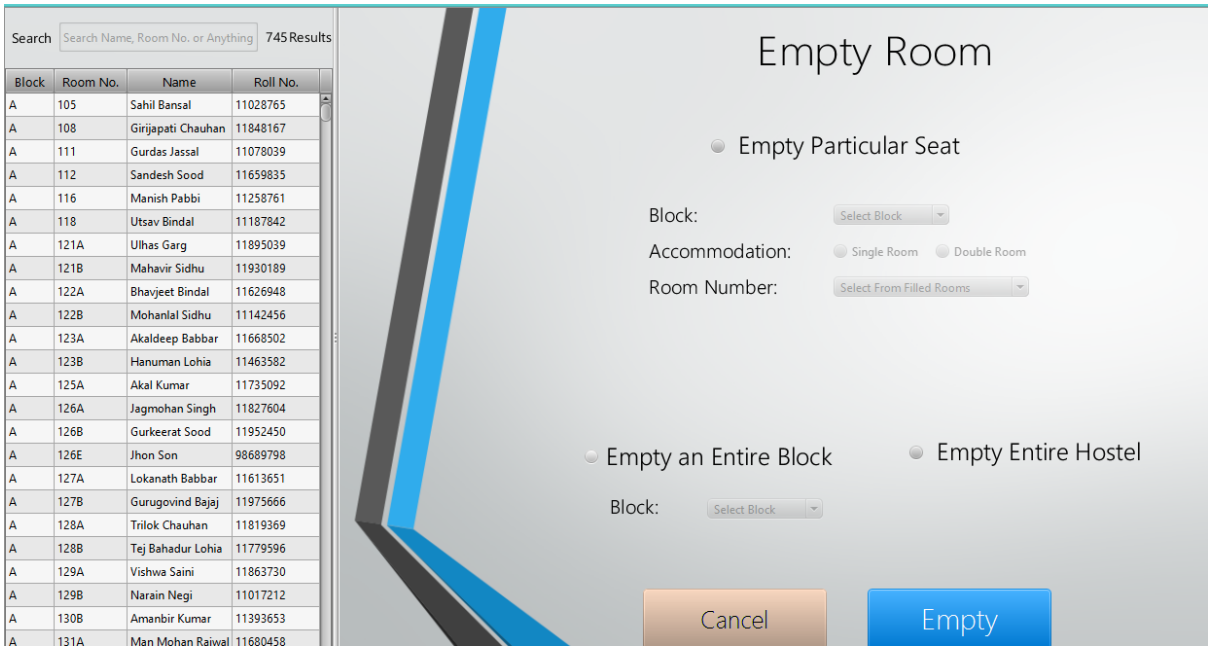
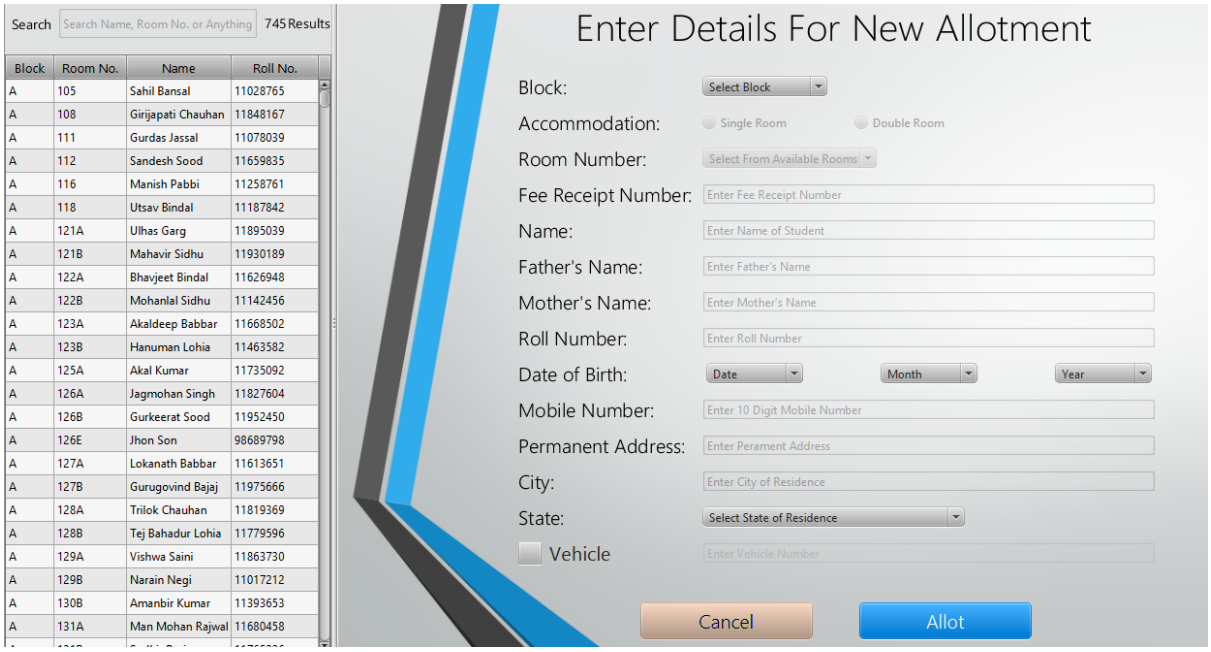
A 129B Narain Negi 11017212
A 130B Amanbir Kumar 11393653
A 131A Man Mohan Rajwal 11680458
Details of Student
Block: A
Room Number: 128B
Date Registered: Friday, 23 August 2013, 08:31 PM
Fee Receipt Number: 1251108
Name: Tej Bahadur Lohia
Father's Name: Kqjrqi Lohia
Mother's Name: Hvbeaq Lohia
Roll Number: 11779596
Date of Birth: 14 November 1992
Mobile Number: 7506069031
Permanent Address: 79-Y/243, Mdndepk, Gjusaiu
City: Ulhasnagar
State: Kerala
Vehicle MW 03 Q 7496
Cancel
Update
View & Pay Bill



Search: Search by Room Number

om Number	Name	Current Due Amount	Subtract Amount	Add Amount
	Sahil Bansal	100	0	0
	Girijapati Chauhan	2220	0	0
	Gurdas Jassal	2224	0	0
	Sandesh Sood	1276	0	0
	Manish Pabbi	200	0	0
	Utsav Bindal	900	0	0
A	Ulhas Garg	200	0	0
B	Mahavir Sidhu	100	0	0
A	Bhavjeet Bindal	957	0	0
B	Mohanlal Sidhu	114	0	0
A	Akaldeep Babbar	2828	0	0
B	Hanuman Lohia	96	0	0
A	Akal Kumar	0	0	0
A	Jagmohan Singh	1809	0	0
B	Gurkeerat Sood	2378	0	0
E	Jhon Son	0	0	0
A	Lokanath Babbar	889	0	0
B	Gurugovind Bajaj	2379	0	0
A	Trilok Chauhan	1042	0	0
B	Tej Bahadur Lohia	2028	0	0
A	Vishwa Saini	1700	0	0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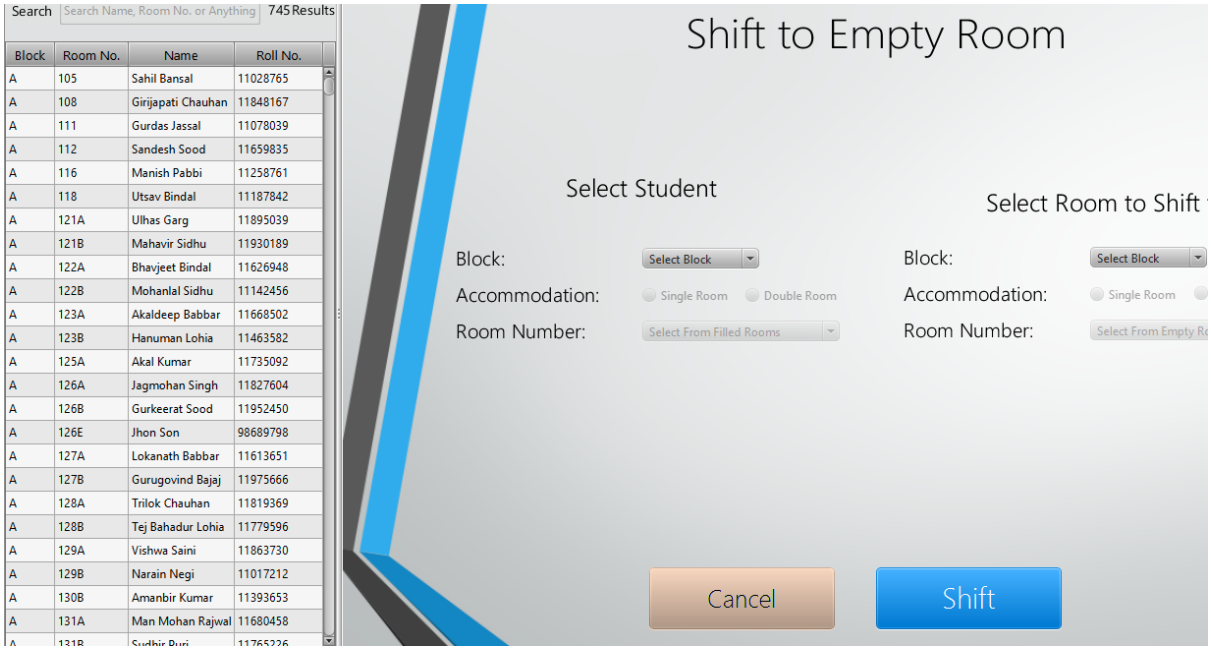
Enter Details For New Allotment
Block:
Select Block
Accommodation:
Single Room
Double Room
Room Number:
Select From Available Rooms
Fee Receipt Number:
Enter Fee Receipt Number
Name:
Enter Name of Student
Father's Name:
Enter Father's Name
Mother's Name:
Enter Mother's Name
Roll Number:
Enter Roll Number
Date of Birth:
Date
Month
Year
Mobile Number:
Enter 10 Digit Mobile Number
Permanent Address:
Enter Perament Address
City:
Enter City of Residence
State:
Select State of Residence
Vehicle
Enter Vehicle Number
Cancel
Allot

Change Password
Change Password
Old Password:
New Password:
Enter New Password
Confirm New Password:
Retype New Password
Maximum Password Length: 20
Minimum Password Length: 5
Password is Case-Sensitive.
Update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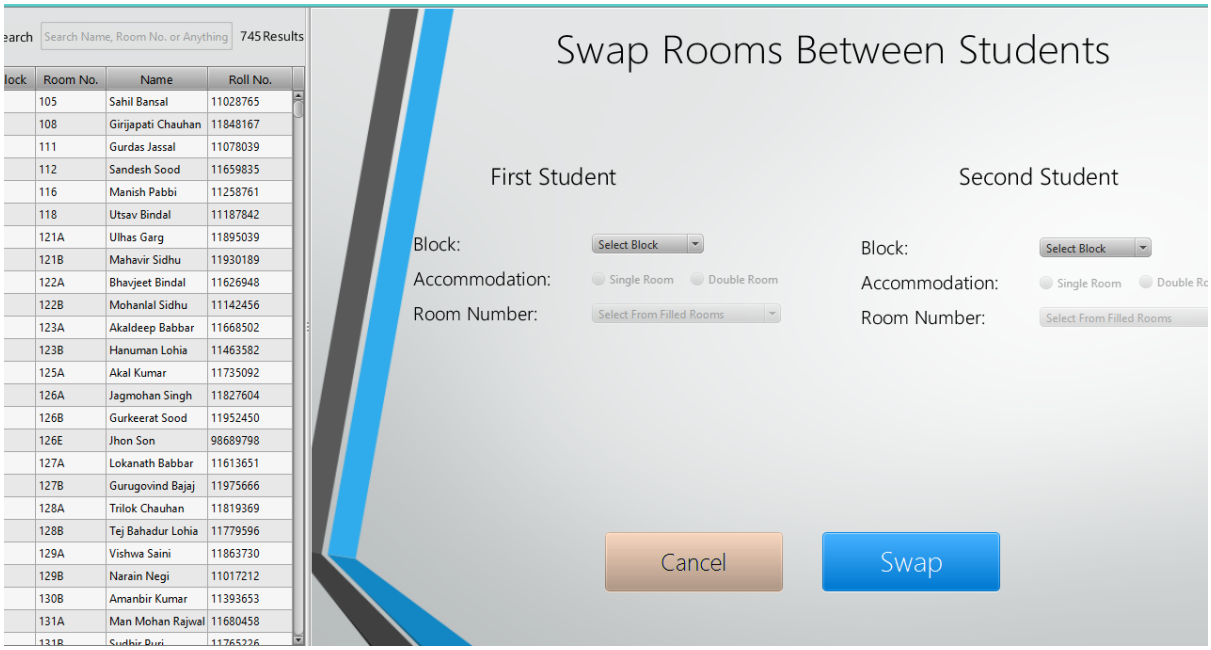
Shift to Empty Room
Select Student
Block:
Select Block
Accommodation:
Single Room
Double Room
Room Number:
Select From Filled Rooms
Select Room to Shift
Block:
Select Block
Accommodation:
Single Room
Room Number:
Cancel
Shift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130B Amanbir Kumar 11393653
131A Man Mohan Rajwal 11680458
Swap Rooms Between Students
First Student
Block:
Select Block
Accommodation:
Single Room
Double Room
Room Number:
Select From Filled Rooms
Second Student
Block:
Select Block
Accommodation:
Single Room
Room Number:
Select From Filled Rooms
Cancel
Swap